A947 Multi-Modal Corridor Study

Detailed Appraisal Report

Project number: 60709527

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Quality information

Prepared by	Checked by	Verified by	Approved by
Charlie Fuller	Eleanor Bagnall	Joanne Melarkey	Andrew Robb
Consultant	Associate Director	Regional Director	Associate Director

Revision History

Revision	Revision date	Details	Authorised	Name	Position
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Prepared for:

Aberdeen City Council
Marischal College
Broad Street
Aberdeen
AB10 1AB

Prepared by:

AECOM Limited
177 Bothwell Street
Glasgow
G2 7ER

T: +44 141 202 0500
aecom.com

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1. Introduction

1.1 Background

Aberdeen City Council (ACC) has commissioned AECOM to further consider options to improve transport connections for users of the A947 corridor between the Aberdeen Western Peripheral Route (AWPR) and the A96 (at the Bucksburn Roundabout). The study, which is being funded by Nestrans, is being taken forward in accordance with Scottish Transport Appraisal Guidance (STAG) and builds on initial work completed by AECOM in 2022 to identify and appraise options to improve active travel and public transport opportunities along this corridor.

This stage of the study further develops the remaining options under consideration and identifies those that should be progressed in an Outline Business Case (OBC) for intervention on the study corridor. The OBC has been provided to ACC under separate cover and forms the next stage of the process following the completion of the Detailed Appraisal. This report presents the findings of the appraisal and includes:

- Updated context setting;
- Further option development;
- Assessment of the options against Transport Planning Objectives (TPOs), STAG Criteria, Cost to Government, and Deliverability Criteria noting key risks and uncertainties; and
- Consultation and engagement, informing Public Acceptability of the options subject to Detailed Appraisal.

The study is being guided by a Project Steering Group led by ACC and supported by Aberdeenshire Council and Nestrans.

The A947 Multi-Modal Corridor Study is one of several simultaneous corridor studies being progressed by ACC in light of the changes to travel patterns associated with the opening of the AWPR, as well as other recent developments and changes to behaviour following the COVID-19 pandemic.

1.2 STAG Appraisal

As outlined above, this study is being taken forward in accordance with STAG. STAG is the appraisal framework developed by the Scottish Government to aid transport planners and decision-makers in the development of transport policies, plans, programmes and projects in Scotland. It is a requirement that all transport projects are appraised in accordance with STAG where Scottish Government support or approval is required.

There are four parts to the STAG process as follows:

- Initial Appraisal (Case for Change) – an analysis of present and future problems and opportunities and setting of TPOs in order to establish the Case for Change;
- Preliminary Appraisal – option generation, sifting and development followed by a largely qualitative appraisal of impacts, designed to decide whether a proposal should proceed, subject to meeting the planning objectives and fitting with relevant policies;
- Detailed Appraisal – Detailed Appraisal of the options taken forward from the Preliminary Appraisal with specific consideration given to the TPOs, STAG Criteria (Environment; Climate Change; Health, Safety and Wellbeing; Economy; and Equality and Accessibility), Cost to Government, Implementability (Deliverability), and Risk and Uncertainty; and
- Post-Appraisal – development of a monitoring and evaluation plan to set out how the preferred option(s) will be assessed against the original appraisal once investment is committed and following implementation.

1.3 Study Area

The study area is the north-south transport corridor between the A90 AWPR in the north and Bucksburn Roundabout joining the A96 in the south, as shown in **Figure 1-1**. The corridor provides access to a range of communities and key destinations, including Dyce and The Event Complex Aberdeen (TECA). The A947 route marked in red bypasses the central Dyce area while Victoria Street, marked in green, connects the north and south of Riverview Drive.

Figure 1-1: Study Area

1.4 Roads Hierarchy

It should be noted that ACC and partners carried out a review of the roads hierarchy within Aberdeen City in 2019. This was undertaken to develop options for a system that reflects the new role of the city centre as a destination and makes the most effective use of the AWPR for distributing traffic around the city to the most appropriate radial route to reduce the extent of cross-city traffic movements.

In terms of the A947 study corridor, the study, and subsequent review by ACC, resulted in the following changes to the classification of Victoria Street and Riverview Drive:

- Victoria Street changed from an A-class priority route (A947) to a C-class tertiary route; and
- Riverview Drive changed from an unclassified route to an A-class priority route (A947).

The Roads Hierarchy Study defines priority routes as the main movement corridors linking the AWPR to key destinations and notes that they should be considered for the provision of bus lanes and segregated cycleways where possible, with bus and cycle priority through junctions. The change in classification of Riverview Drive means that the A947 now routes via Riverview Drive instead of Victoria Street.

The Roads Hierarchy Study defines tertiary routes as local access roads with little strategic function, and as such are unsuitable for large volumes of traffic. The redesignation of Victoria Street therefore provides enhanced opportunities to implement improvements for public transport and active travel and this principle has guided the A947 study since the Preliminary Appraisal.

1.5 Report Structure

Following this introductory Chapter, the remainder of the report is structured as follows:

- Chapter 2 – Updates to Study Context;
- Chapter 3 – Previous Work;
- Chapter 4 – Preparation for Detailed Appraisal Stage;
- Chapter 5 – Transport Planning Objectives;
- Chapter 6 – Consultation and Engagement;
- Chapter 7 – Approach to Appraisal;
- Chapter 8 – Detailed Options Appraisal – TPOs;
- Chapter 9 – Detailed Options Appraisal – STAG Criteria;
- Chapter 10 – Detailed Options Appraisal – Deliverability Criteria;
- Chapter 11 – Detailed Options Appraisal – Statutory Impact Assessment Criteria;
- Chapter 12 – Cost to Government;
- Chapter 13 – Risk and Uncertainty;
- Chapter 14 – Monitoring and Evaluation; and
- Chapter 15 – Next Steps – OBC Package Development.

The following Appendices support the Detailed Appraisal:

- Appendix A – Rationale for Table 2 Option Sifting;
- Appendix B – Table 1 Design Technical Note;
- Appendix C – Table 2 Preliminary Option Development Technical Note;
- Appendix D – Table 2 Design Technical Note;
- Appendix E – Table 2 Option Designs;
- Appendix F – Detailed Table 2 Option Cost Breakdown;
- Appendix G – Environmental Constraints Mapping;
- Appendix H – Active Mode Appraisal Toolkit (AMAT) Assessment; and
- Appendix I – Consultation Results Outputs.

2. Updates to Study Context

2.1 Introduction

This Chapter will provide a brief overview of updates to the study context that have emerged since the Preliminary Appraisal was concluded in September 2022. This will include updates to the policy, development and transport context.

2.2 Policy Context

2.2.1 National

National Transport Strategy (NTS): Third Annual Delivery Plan (2023-24)

In December 2023, Transport Scotland published the Scottish Government's third National Transport Strategy (NTS) Delivery Plan[1]. The Delivery Plan highlights the new projects and policies being developed that align with the vision and priorities set out in the NTS2 (2020-2040). The report focuses on the four priorities set out in NTS2 and the projects that are progressing across Scotland to help meet these priorities and in doing so achieve the national vision for the transport system.

The Delivery Plan highlights a few projects that have made or are making progress in the North East region including bus prioritisation in Aberdeen City Centre, the enhancements programme on the A96 corridor and delivery of the Low Emission Zone (LEZ) in Aberdeen City Centre.

Second Strategic Transport Projects Review (STPR2) (2022)

STPR2 was taken forward to inform the Scottish Government's transport investment programme in Scotland over the next 20 years (2022-2042) in order to help deliver the vision, priorities and outcomes for transport set out in the Second National Transport Strategy (NTS2). The outcomes will aim to enhance accessibility across Scotland for residents, visitors and businesses; create better connectivity with sustainable, smart and cleaner transport options; and highlight the vital contribution that transport investment can play in enabling and sustaining Scotland's economic growth. A number of recommendations were published in December 2022 which included two specific to the North East region; these included Recommendation #13 – Aberdeen Rapid Transit and Recommendation #16 – Perth-Dundee-Aberdeen rail corridor enhancements.

A number of other recommendations were noted as being of particular benefit to the North East region including:

- Recommendation #2 – Active freeways and cycle parking hubs;
- Recommendation #18 – Supporting integrated journeys at ferry terminals;
- Recommendation #24 – Ferry vessel renewal and replacement and progressive decarbonisation;
- Recommendation #42 – Investment in port infrastructure to support vessel renewal and replacement and progressive decarbonisation; and
- Recommendation #44 – Rail freight terminals and facilities.

A further 28 recommendations were considered to provide benefits for individuals, families, communities and businesses across most parts of Scotland. Of particular relevance to the A947 corridor are the recommendations around improving the safety and resilience of the strategic transport network, specifically in relation to climate change adaptation and resilience.

Climate Change Route Map (2022)

In January 2022 the Scottish Government and the Convention of Scottish Local Authorities (COSLA) developed a Route Map to deliver the shift in travel behaviours required to meet the 20% reduction target set out in the Climate Change Plan, recognising the need for ongoing collaboration and partnership working between national, regional and local Government as well as public, private and third sector partners.

The behavioural changes identified in the Route Map are centred around: reducing the need to travel; living well locally; switching modes; and combining or sharing car trips.

[1] National Transport Strategy – Third Scottish Government Delivery Plan

Successful implementation of the actions set out in the Route Map are expected to enable statutory climate change targets to be met, whilst at the same time creating better ways of living, improved health and wellbeing and the associated social and economic benefits of a society less dominated by private cars.

National Planning Framework 4 (2023)

National Planning Framework 4 (NPF4) was approved by Scottish Government in February 2023. It sets out a long-term spatial strategy for development and infrastructure in Scotland. NPF4 sets out a need to "embrace and deliver radical change to tackle and adapt to climate change, restore biodiversity loss, improve health and wellbeing, build a wellbeing economy and create great places." In this context, NPF4 recognises that places need to be planned in a way that reduces the need to travel and is hence also aligned to the Sustainable Investment Hierarchy and policies for cleaner air and climate change action.

Scotland's National Strategy for Economic Transformation (2022)

Scotland's National Strategy for Economic Transformation (NSET), published by the Scottish Government in March 2022, sets out the priorities for Scotland's economy over the ten-year period to 2032. It sets out a vision to create a wellbeing economy: a society that is thriving across economic, social and environmental dimensions, and that delivers prosperity for all Scotland's people and places, whilst respecting environmental limits, including climate and nature targets. It aims to deliver economic growth that significantly outperforms the last decade, so that the Scottish economy is more prosperous, more productive and more internationally competitive, and recognises that improved accessibility, better connectivity and transport investment are vital factors in ensuring economic transformation for Scotland.

Cycling Framework and Delivery Plan for Active Travel in Scotland 2022 – 2030

The Cycling Framework and Delivery Plan for Active Travel in Scotland builds on the progress made through the last three iterations of the Cycling Action Plan for Scotland between 2010 and 2020. The Cycling Framework for Active Travel sets out the strategic priorities and shared actions to maximise cycling's contribution in realising the Scottish Government's long term Vision for Active Travel in Scotland: That Scotland's communities are shaped around people, with walking and cycling the most popular choice for everyday short journeys.

Cycling Framework for Active Travel – A Plan for Everyday Cycling (2023)

The Cycling Framework for Active Travel[2] was published by Transport Scotland in April 2023. The Plan is structured around six themes:

- Safe cycling infrastructure – high quality, suitable and accessible for all;
- Effective resourcing – long-term funding for the delivery of infrastructure and supporting access, training and facilities programmes;
- Fair access – increased equity of access to cycling, ensuring that adapted and non-standard cycles, e-bikes and cargo bikes are supported;
- Training and education – ensuring infrastructure is supported by wrap around promotional programmes, training and complementary initiatives;
- Network planning – prioritise investment based on local active travel strategies, mapping existing and planned networks to improve consistency; and
- Monitoring – ensuring robust processes are in place to capture insight which will help to inform future network planning, including local and national alignment of routes and facilities.

Cycling Scotland Strategy 2023-28 (2023)

Cycling Scotland is a national charity set up to represent cycling interests and to increase levels of cycling and is one of the Scottish Government's core active travel delivery partners. In July 2023, Cycling Scotland updated their strategy for the period from 2023 to 2028. The vision remains 'a sustainable, inclusive and healthy Scotland where anyone, anywhere, can enjoy all the benefits of cycling'.

Cycling Scotland has set six strategic aims which will underpin their work and approach:

- Leading and facilitating the design and delivery of high quality projects;
- Tackling barriers to enable and encourage increased cycling levels across Scotland;
- Connecting a range of voices to drive the case for cycling;

[2] https://www.transport.gov.scot/publication/cycling-framework-for-active-travel-a-plan-for-everyday-cycling/

- Ensuring cycling helps address health, economic and social inequalities;
- Serving as an influential centre of knowledge and best practice for Scotland; and
- Being a strong, sustainable and effective charitable organisation.

The Strategy notes that Cycling Scotland will assess progress by the sector through the following measures:

- The number of people cycling;
- The accessibility of cycling;
- The level and range of funding for cycling;
- The profile of and attitudes towards cycling;
- Casualty rate per 100 million km for people killed or seriously injured while cycling; and
- Percentage of different population groups who ever cycle.

2.2.2 Regional

Regional Transport Strategy 2040

The Nestrans Regional Transport Strategy (RTS) 2040 was adopted in November 2021 and is the long-term strategy for Aberdeen City and Aberdeenshire, setting the vision and direction for transport in the region for the next 20 years. The RTS sets a vision to provide a "safer, cleaner, more inclusive, accessible and more resilient transport system" which supports the natural and built environment and prosperous communities. This is supported by the following 'pillars' which set out the policy objectives for transport in the North East: Promoting equality; Reducing our impact on climate change and protecting the environment; Help deliver inclusive economic growth and; Improving health, safety and wellbeing. In developing these further, the strategy sets out six key priorities which act as aims to set the tone and direction of the strategy. These are displayed in **Figure 2-1**, below:

Figure 2-1: RTS Key Priorities

The RTS sets out actions intended to meet the above objectives and priorities, one being AT1 to upgrade existing active travel routes.

Draft Regional Economic Strategy 2023

The Draft Regional Economic Strategy[3] sets out a long-term plan of investment for North East Scotland to transform its economy over the next decade and beyond. The 2023 Strategy outlines the current challenges facing the region, the key policy developments and ultimately the implications for North East Scotland. The vision outlined in the Strategy is *"for a regional economy that enables us to thrive. It is leading a just energy transition, diversifying our economy, enabling entrepreneurship and innovation, and delivering a wellbeing economy for our people – a post fossil-fuel future"*. It outlines the following objectives that respond to the priorities, opportunities and challenges for the regional economy and will support delivery of the long-term vision to 2035:

- To establish the North East as a pioneer of the energy transition, by delivering an 80% reduction in carbon emissions per head;
- To maintain regional GVA as a share of Scotland's overall GVA while increasing the share of regional GVA from region's growth sectors;
- To maintain a healthy, sustainable, working age population through increasing economic participation rates;
- To become a Real Living Wage region with 95% of overall employment offering a real living wage or higher; and
- To protect and enhance the natural capital of the region by aligning to national ambitions to manage 30% of the region for people and nature by 2030.

2.2.3 Local

Aberdeenshire Local Development Plan 2023 and Aberdeen Local Development Plan 2023

Both the Aberdeenshire LDP 2023 and Aberdeen LDP 2023 were adopted by their respective councils in the first half of 2023 and cover the period of 2023 – 2028. Both of the LDPs take cognisance of each other whilst also incorporating aspects of the Aberdeen City and Shire Strategic Development Plan 2020 which sets the direction of growth for the City Region.

The allocations outlined in the Proposed LDPs and reported in the Preliminary Appraisal are predominantly still accurate, with only one change to a housing allocation in Turriff (north of the study area within Aberdeenshire along the A947 corridor) with the removal for an allocation for 40 homes. Within Aberdeen City, there are allocations for a few hundred new homes within the study area, with an additional several thousand homes (including developments OP9 of 2,300 homes and OP20 with 4,400 homes), business and employment land allocations on land adjacent to the study corridor. Within Aberdeenshire, there are an additional few thousand homes planned and business and employment land.

ACC Local Transport Strategy

ACC is currently in the process of refreshing the Local Transport Strategy (LTS) for Aberdeen City. The Draft Aberdeen Local Transport Strategy (2023-2030) was reported to the Net Zero, Environment and Transport Committee on 29th August 2023. It was subject to an eight week period of public consultation[4] concluding in January 2024, following which a final LTS will be produced and reported to committee in 2025.

Aberdeenshire Local Transport Strategy

Aberdeenshire Council is also in the process of updating its Local Transport Strategy. Public engagement on the main issues was undertaken between May and September 2023, with residents and stakeholders asked to consider a number of transportation themes and share their views on the main opportunities and challenges facing transport across Aberdeenshire. Feedback from this consultation is being used to help shape the draft LTS which will be developed with a view to going out for a further period of public consultation on the draft document in 2024 with final publication in 2024/2025.

2.2.4 Ongoing Studies

Aberdeen Rapid Transit Business Case

Nestrans commissioned Stantec in September 2021 to undertake the Aberdeen Rapid Transit (ART) Options Appraisal. This involves a STAG-based appraisal and business case preparation considering the future development of Aberdeen's bus-based public transport network, inclusive of links into Aberdeenshire. It is being undertaken in the context of a vision to develop an ART network.

[3] https://committees.aberdeencity.gov.uk/documents/s144408/RES%20Appx1%20-%20RES%202035%20Final%20Draft.pdf
[4] https://consultation.aberdeencity.gov.uk/planning/lts/

The Case for Change for ART was reported in March 2022 and presented the problems and opportunities identified, the rationale for the development of ART, and set out associated TPOs developed for the study. The Case for Change also defined a set of success factors for ART and presented a review of planned, under construction and operational Bus Rapid Transit (BRT) schemes across the UK and Europe.

The Preliminary Appraisal for ART was reported in June 2022 and detailed the option development process and the, mainly qualitative, appraisal of these options in line with STAG. The Detailed Appraisal was reported in April 2023. Based on the findings of the appraisal, two options were recommended to be worthy of further development and consideration:

- Option 3A – This option looks at improvement to existing services on the ART corridors to provide the ART network and in addition considering wider stop spacing, and benefits from new ART 'platforms' as well as ART branded vehicles, significantly improving the quality of travel by public transport and differentiating ART from the existing bus network. The option also identifies the need to integrate the underlying bus network with ART, to avoid duplication of service on ART corridors and to create a coherent and robust city-wide public transport network. The report concludes that this option could be delivered through a BSIP arrangement with local bus operators.
- Option 5 – This option includes the introduction of new bespoke cross-city ART services and the integration of the wider bus network into the ART network. This option has the potential to provide Aberdeen with a world-class public transport option but comes with potentially significant additional cost and risk to the public sector. The report concludes that this option would be most effectively delivered through a franchise arrangement.

The Nestrans Board approved the recommendation to progress the study to Outline Business Case (OBC), giving further consideration to the options outlined above. In June 2024, the ART routeing recommendations were approved by Aberdeen City Council, Aberdeenshire Council and the Nestrans Board – ART will comprise a 'Red Line' from Blackdog to Westhill and a 'Purple Line' from Craibstone Park & Ride to Portlethen.

The cross-city network of ART corridors connects key destinations across Aberdeen and the wider region taking people to the key places they want to go to including education, employment, healthcare, retail and leisure destinations, the airport and rail station, as well as the city centre. The ART cross-city route map (approved in June 2024) is outlined in **Figure 2.2**.

Although the A947 study corridor is not an identified ART corridor, the A96 which routes to the south of the study area and connects to the A947 at Bucksburn Roundabout, is one of the identified ART corridors and therefore this study must take cognisance of ART to ensure that emerging public transport options as part of this study complement the ART ambitions along the A96 corridor.

Figure 2.2: ART Route Map

Regional Active Travel Network Study

Nestrans are developing a Regional Active Travel Network (RATN) which is currently published in draft form for public consultation. When completed the study will identify aspirations for a high-quality, cohesive network of walking, wheeling and cycling routes in the North East of Scotland. The network is formed of important routes in built-up areas, and of regional connectors which link the region's communities, however does not include improvements to neighbourhood links and local streets and paths. The network is to be made up of different categories of route including Primary Streets, Secondary Streets, Traffic Free Paths, Shared Use Paths, Mixed Traffic Roads and Quiet Roads.

The study sets out the prioritisation of some routes, with the key corridor linking Aberdeen City to Dyce and the Airport highlighted as a short term priority, with other links in the A947 study area considered long-term priorities.

Within the A947 study area the following roads have been designated as Primary Streets. A Primary Street would involve having footways, cycle tracks and vehicular traffic all separated from one another, with pedestrians and cyclists given priority at signalised junctions and side roads. Space for active travel is increased so new and less confident users can use the infrastructure. The network plan notes that some on-street parking/loading may need to be moved to make space for new infrastructure:

- A947 between Bucksburn Roundabout and A947/Riverview Drive roundabout, through Victoria Street;
- Riverview Drive; and
- Corsehill Burn Road, Forrit Burn Road, and Gough Burn Crescent, around TECA.

Within the A947 study area the following roads have been designated as Secondary Streets. A Secondary Street would involve footways separated from cycleways, with cycleways mostly separated from vehicular traffic but these may have to mix where there is limited space. As with Primary Routes the network plan notes that some on-street parking/loading may need to be moved to make space for new infrastructure:

- Bankhead Road, Bankhead Avenue, Greenburn Road and Greenburn Drive;
- Wellheads Drive and Farburn Terrace;
- Old Meldrum Road;
- Mugiemoss Road;
- Market Street and Stoneywood Terrace;
- Stoneywood Park and Stoneywood Park North;
- Station Road;
- Various streets between Victoria Street and Riverview Drive such as Overton Circle, Gordon Terrace, Netherview Avenue and Balloch Way;
- Pitmedden Road;
- Dyce Drive[5]; and
- A947 between Riverview Drive roundabout and Dyce Drive junction.

The following routes listed are traffic free paths within built up areas away from roads – and where footways are separated from cycle tracks:

- Riverside Park;
- Paths through Central Park; and
- A link between Waterton Road and Gough Burn Crescent.

Going forward, ACC will need to work with Nestrans to ensure that the outcomes of this corridor study complement the adopted prioritisation of routes coming forward in the RATN.

A96 Corridor Review

The Scottish Government has committed to take forward a programme of transport enhancements on the A96 corridor to improve connectivity between surrounding towns, tackle congestion and address safety and environmental issues. This includes reviewing the A96 corridor in accordance with Scottish Transport Appraisal Guidance (STAG).

[5] A section of Dyce Drive is a Primary Route.

The review covers the transport corridor from Raigmore Interchange at Inverness to Craibstone Junction at Aberdeen. The Initial Appraisal: Case for Change has now concluded which considered transport problems and opportunities, the changing policy context and other key considerations, such as development and growth aims for the corridor and surrounding areas. It has also considered the impact of the global climate emergency and the COVID-19 pandemic on how people work and travel within the corridor. Sixteen options considering all relevant transport modes within the A96 corridor, including road, rail, public transport and active travel have been taken forward for the next stage of STAG appraisal.

Subsequent phases of the STAG process, the Preliminary and Detailed Appraisal phases, involve more detailed appraisal work, considering the feasibility and performance of options to address the identified transport related problems and opportunities and will be developed as the process moves forward.

A96 Multi-Modal Study

ACC completed a STAG-based appraisal of options for improving transport connections (particularly active travel and public transport) on the A96 between Inverurie and Aberdeen. The study area for this study overlaps with the A947 study area at the A947/A96 roundabout at Bucksburn.

The recommended options were presented to the City Growth and Resources Committee on 21 June 2022. These included:

Inverurie to Craibstone (Section I)

Active Travel

- *Upgrade the shared use path existing along the A96 between Inverurie and Kintore.*
- *A new shared use path parallel to the A96 between Kintore and Craibstone.*

Bus

- *A standalone junction improvement (left turn split lane) between Port Elphinstone Road and the A96 eastbound carriageway to enable buses easily exit Inverurie onto the A96.*

Craibstone to Printfield Walk (Section II)

Active Travel

- *One-way segregated (with-flow) cycle tracks [on both sides of carriageway] or*
- *Two-way segregated cycle track [one side of the carriageway], as well as footway and junction improvements to improve the pedestrian environment.*

Bus

- *Continuous Standard bus lanes or Enhanced bus lanes in both direction of the carriageway.*

Printfield Walk to Mounthooly Roundabout (Section III)

Active Travel

Continuous from the previous section

- *One-way segregated (with-flow) cycle tracks [on both sides of the carriageway] or*
- *Two-way segregated cycle track [one side of the carriageway], as well as footway and junction improvements to improve the pedestrian environment.*

Bus

- *Continuous Standard bus lanes or Enhanced bus lanes along sections of the route in both direction of the carriageway.*

Takes account of the committed Berryden Corridor Improvement Project (BCIP) which crosses the A96 at Clifton Road and extends to St Machar Drive. Also considers the potential for road widening at key constrained sections of the route to Mounthooly roundabout.

The committee recommended that work to further develop the options presented above be progressed to a more Detailed Appraisal and an Outline Business Case.

Cross-City Connections Study

ACC undertook a review of the STAG Part 2 appraisal for Cross City Connections. The study aims to identify priority schemes for development along with a programme of delivery that considers development build out, connections with the internal links of development sites as well as the general feasibility and affordability of each option.

The recommended options were presented to the Net Zero, Environment and Transport Committee on 07 March 2023. The committee recommended that active travel options 7, 8, 9, 11 and 20 should proceed to further development work and full Outline Business Case.

The recommended options proceeding to further development and Outline Business Case which are of relevance to the A947 Study include:

Route Option 7

- *Provide a new connection between Grandhome and Stoneywood – provide a new bridge crossing over River Don.*
- *Provide a new connection between new bridge over the River Don and Stoneywood Terrace.*

Route Option 8

- *Upgrade and extend Core Path 101 to meet new bridge (see Option 7) and Stoneywood development.*

Route Option 9

- *Stop up Millhill Brae on western side of A944 before the underpass and prior to the residential property and allow residential access only.*
- *Upgrade section of Core Path 4 through park.*
- *Upgrade on road section of Core Path 4 on Waterton Road.*

2.3 Development Context

2.3.1 Planning Applications

Figure 2-3 provides an overview of Planning Application DPP/221232 for the erection of 91 homes including associated infrastructure, open space and landscaping.

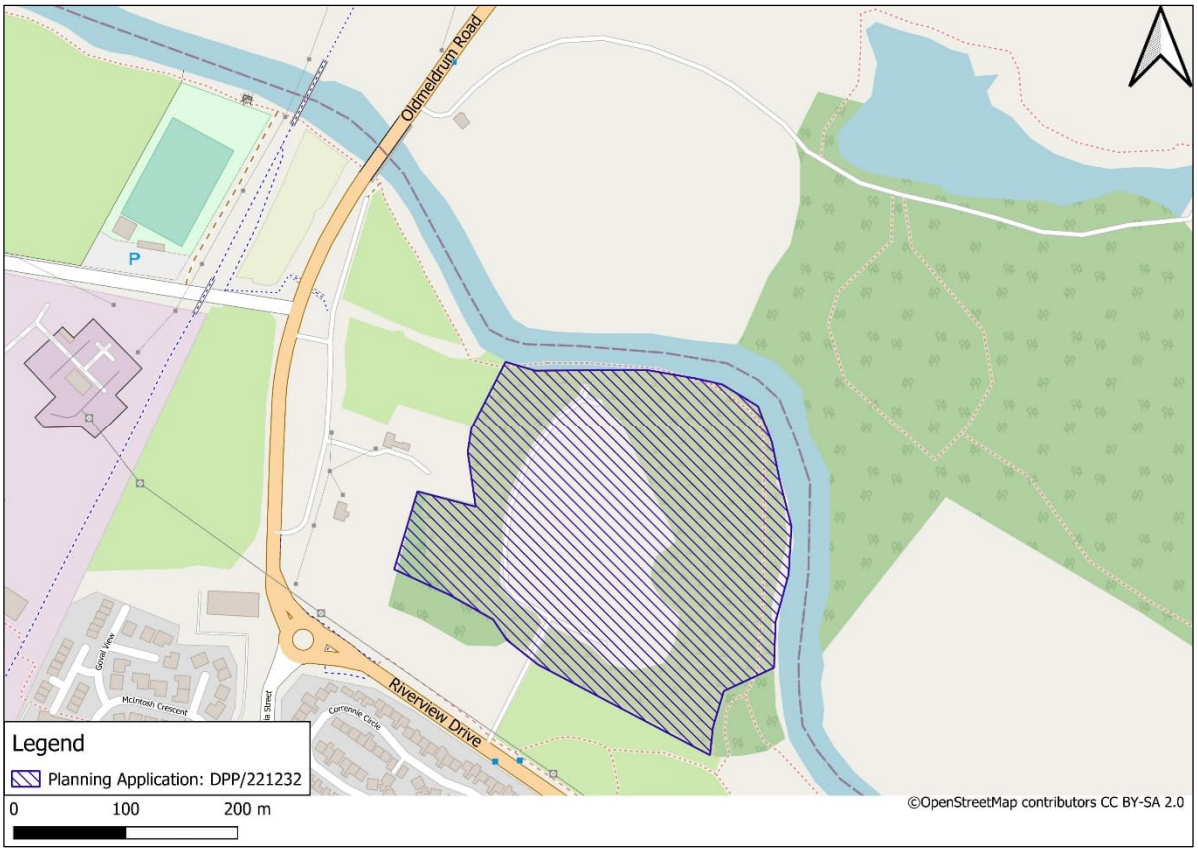


Figure 2-3: Planning Application DPP/221232

As of August 2023, this application has now been approved conditionally subject to Legal Agreement.

2.4 Summary

This Chapter has provided a brief overview of updates to the study context that have emerged since the writing of the Final Preliminary Appraisal Report in September 2022. The following Chapter summarises the outcomes of the previous work undertaken in 2021/2022.

3. Previous Work

3.1 Introduction

This Chapter provides an overview of the work undertaken at the previous stage of the study, incorporating the Initial Appraisal and Preliminary Appraisal.

3.2 Initial and Preliminary Appraisal Summary

The previous stage of the study was published in September 2022 and included the identification of key problems, issues, constraints and opportunities (PICOs) on the corridor; development of TPOs for the study; generation of a long list of options; and Preliminary Appraisal.

3.2.1 Problems, Issues, Constraints and Opportunities

A localised and strategic review was undertaken to determine the PICOs along the study corridor. A summary of the strategic PICOs identified along the A947 corridor are outlined below.

Problems

- **Formartine & Buchan (F&B) Way:** lack of maintenance, limited signage and inaccessible gates and barriers.
- **Declining Bus Patronage:** long bus journey times considering (relatively short) distance to City Centre and frequency/timetabling issues particularly when accessing Aberdeen International Airport for shift patterns outwith bus operation times.
- **Active Travel Infrastructure:** lack of footway provision to match pedestrian desire lines and advisory cycle lanes are inconsistent and narrow.
- **Driver Behaviour:** anecdotal evidence of vehicles traveling at excessive speeds, ignoring cycling provision and flouting ‘no entry signs’
- **Maintenance of Active Travel Infrastructure:** lack of maintenance of active travel infrastructure has led to the poor condition of surfaces of advisory cycle lanes, footways and the underpass at Millhill Brae.
- **Signage:** lack of active travel signage along the corridor.
- **Monitoring:** issues with active travel counters, leading to a lack of counter validation to better understand active travel movements.

Opportunities

- **Locking in the Benefits of the AWPR:** opportunity to incentivise public transport along the corridor, locking in the benefits of reduced congestion and journey time savings.
- **Policy Context:** the study aims strongly align with the national, regional and local policy context.
- **Bus Service Partnerships:** a Quality Partnership Agreement was signed by parties in the region in 2018 to form the North East Bus Alliance, providing renewed impetus to the identification of measures that can enhance the attractiveness of bus services in the region.
- **Funding:** the Scottish Government has outlined increased funding for sustainable transport interventions.
- **Distances to Work:** the majority of those living in the A947 study area travel less than 10km to work, providing opportunities to encourage active travel use.
- **20-minute Neighbourhood:** there is potential to implement the ‘20-minute neighbourhood’ concept in Dyce.

Issues

- **Future Attitudes to Travel and Travel Behaviour:** following the COVID-19 pandemic, there are uncertainties if the changes observed will be short-term or result in a structural change in how society operates.
- **Climate Change:** is it likely climate change will have an increasing impact on the North East region, bringing rising sea levels and potential extreme weather events.
- **Technology:** there is uncertainty how advances in Electric Vehicle (EV) technology and autonomous vehicle technology will affect travel behaviour and ownership.
- **Policy:** demand management measures in the city centre could result in a shift away from private car to public transport and active travel for journeys to the city centre
- **High Car Use:** car mode share in the area is high; driving to work rate is higher than the national average.

Constraints

- **Funding:** Scottish Government revenue funding to local authorities has been increasingly constrained.
- **Environment:** the corridor has a number of environmental constraints including river flooding and wildlife habitats.
- **Trunk Road Contracts (AWPR/B-T):** Aberdeen Roads Limited have a design, build and operate contract for the AWPR. Therefore, any design changes at AWPR junctions may be more complex to bring forward than at other locations on the corridor and any alteration to infrastructure may require consideration of contractual arrangement at these locations, in consultation with Aberdeen Roads Limited, Transport Scotland and the Local Roads Authorities.

3.2.2 Transport Planning Objectives

In line with STAG, development of TPOs was driven by an understanding of the evidence-based problems and opportunities identified along the study corridor. The TPOs agreed at the previous stage of study were as follows:

- **TPO1:** Increase the modal share of walking on the A947 corridor for all journey types
- **TPO2:** Increase the modal share of cycling on the A947 corridor for all journey types
- **TPO3:** Increase the modal share of public transport on the A947 corridor for all journey types
- **TPO4:** Improve east-west connectivity within Dyce to enhance walkability within the local area and promote improved accessibility for local movements
- **TPO5:** Improve accessibility to the key transport hubs of Dyce Rail Station, Aberdeen Airport and Craibstone Park and Ride and key destinations including TECA by non-car modes
- **TPO6:** Ensure the main routes through the Study Area function in accordance with their role in the revised Roads Hierarchy.

3.2.3 Option Generation and Sifting

A long list of options was developed at the Initial Appraisal stage, based on a number of sources, including consultation with Local Authority officers, stakeholders and Community Council groups; a review of previous studies to identify historical proposals that remain viable options; a review of statutory planning and policy documents; and outputs from the evidence-led process followed by the team undertaking the appraisal. This resulted in the development of 68 active travel options, 14 public transport options and 27 ‘other’ options.

Based on the high level performance of options against the TPOs, Deliverability Criteria, Position in the Sustainable Investment Hierarchy (as set out in Scotland’s National Transport Strategy) and Identified Problems

and Opportunities in the study area, it was recommended that 31 options were sifted from further consideration, including 15 active travel options, 8 public transport options and 8 'other' options.

The remaining 78 options (53 active travel, 6 public transport and 19 'other' options) were retained and considered within the Preliminary Appraisal.

3.2.4 Option Packaging

Following option development on those options identified to be retained for further consideration, options were grouped into six packages of the purposes of appraisal:

- Active Travel – Strategic Routes;
- Active Travel – Leisure Route;
- Active Travel – Quiet Route Measures;
- Public Transport – Priority Interventions;
- Placemaking – Living Streets; and
- Placemaking – Complementary Measures.

3.2.5 Option Appraisal

In line with STAG, a high-level appraisal of the option packages against the TPOs, STAG Criteria (Environment; Climate Change; Health, Safety & Wellbeing; Economy; and Equality & Accessibility) and Implementability Criteria (Feasibility, Affordability and Public Acceptability) was undertaken. This was supported by a high-level appraisal of individual options.

The option appraisal also resulted in the identification of a number of 'quick win' options that could provide early opportunities for ACC to progress measures to delivery. These measures were identified as options that could progress in isolation of any more detailed option development beyond the Preliminary Appraisal. These are detailed further in Chapter 4.

3.2.6 City Growth and Resources Committee

The outcomes of the study were reported to ACC's City Growth and Resources Committee on 21 September 2022. The Committee agreed:

(i) That work to further develop the options be progressed to Detailed Appraisal and Outline Business Case (OBC);

(ii) Instruct the Chief Officer – Strategic Place Planning to proceed to Detailed Appraisal and OBC, subject to appropriate funding being sourced;

(iii) Instruct the Chief Officer – Strategic Place Planning to implement the 'quick win' options identified, subject to appropriate funding being sources; and

(iv) Subject to recommendation ii, instruct the Chief Officer – Strategic Place Planning to report the Detailed Appraisal and Outline Business Case and next steps to the Net Zero, Environment and Transport Committee when complete.

3.3 Summary

This Chapter has provided an overview of the work undertaken at the previous stages of the study. The following Chapter sets out the process of preparing for the Detailed Appraisal stage.

4. Preparation for Detailed Appraisal Stage

4.1 Introduction

In preparation for the Detailed Appraisal stage, ACC undertook a review of the individual options remaining following the Preliminary Appraisal stage and separated these into four discrete tables as follows:

- Table 1 – in which all options included should be progressed directly to detailed design and OBC (with no further appraisal required);
- Table 2 – in which each option should be subject to further development, appraisal (in line with STAG) and design, with a view to potential inclusion in the OBC at the end of this process;
- Table 3 – in which all options included are to be reserved for internal appraisal by ACC; and
- Table 4 – in which all options included are to be progressed by ACC as 'quick wins'.

4.2 Table 1 Options

The following options comprise Table 1.

Table 4-1: A947 Multi-Modal Corridor Study – Table 1 Options

AT4	Implement measures to give active travel users priority over Burnside Drive when using the shared use path on Riverview Drive
AT8	Reconfigure the Auchmill Road/Old Meldrum Road junction to improve connections for pedestrians and cyclists
AT13	Provide a formal pedestrian crossing point to the north of the A947/Riverview Drive Roundabout to facilitate movements to the Formartine and Buchan Way
AT14	Provide a formal pedestrian crossing point to the east of the A947/Riverview Drive Roundabout
AT16	Implement formal pedestrian crossing facilities on the arms of the Riverview Drive/Stoneywood Road Roundabout
AT17	Implement signalised crossing facility on Victoria Street adjacent to Tesco
AT19	Implement pedestrian crossing facilities at the Old Meldrum Road/Mugiemoss Road Junction
AT20	Conduct a footway review throughout the study area, identifying gaps in provision and considering the width and surfacing of existing footways
AT30	Provide direct active travel link between Dyce Drive and Riverview Drive
AT32	Implement footways on the south side of the carriageway on Pitmedden Road
AT59	Widen the shared use path on the east side of the A947 to the north of Riverview Drive
AT60	Provide continuous footways on Riverview Drive for the duration of the route
AT68	Conduct a review of wayfinding signage throughout the study area
O11	Undertake a review of parking arrangements on Victoria Street
O15	Introduce placemaking and gateway features on Victoria Street

4.3 Table 2 Options

The following options comprise Table 2.

Table 4-2: A947 Multi-Modal Corridor Study – Table 2 Options

AT24	Improve active travel connectivity between the A947 study area and Aberdeen Airport/Heliport
AT26	Improve active travel connectivity between the A947 study area and TECA
AT27	Improve active travel connectivity between the A947 study area and Kirkhill Industrial Estate
AT31	Improve active travel links between the Riverside Path and housing within Dyce
AT33	Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce,

	particularly along Station Road
AT35	Implement quiet route measures on the local road network to the west of the A947 via Bankhead Road, Wellheads Drive and Farburn Terrace to Dyce Rail Station
AT41	Improve active travel access to the retail park at the Bucksburn Roundabout
AT42	Review access to the Formartine and Buchan Way from within Dyce
AT43	Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)
AT47	Implement with-flow segregated cycleway on the A947 between AWPR Junction and A947/A96 Junction
AT48	Implement two-way segregated cycleway on the A947 between AWPR Junction and A947/A96 Junction
AT51	Implement with-flow segregated cycleway on Old Meldrum Road
AT52	Implement two-way segregated cycleway on Old Meldrum Road
AT55	Implement with-flow segregated cycleway on Gilbert Road
AT56	Implement two-way segregated cycleway on Gilbert Road
AT58	Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport
AT61	Implement shared use path on Victoria Street
AT64	Implement shared use path on Old Meldrum Road
AT65	Implement streetscape improvements and widened pavements along Mugiemoss Road
AT66	Implement shared use path on Gilbert Road
PT2	Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor
PT9	Improve public transport connectivity between the A947 study area and Aberdeen Airport/Heliport
PT10	Improve public transport connectivity between the A947 study area and Craibstone Park & Ride
PT11	Improve public transport connectivity between the A947 study area and TECA
PT12	Improve public transport connectivity between the A947 study area and Kirkhill Industrial Estate
O2	Review the layout of the Victoria Street/Skene Place Junction
O3	Review the layout of the Riverview Drive/Balloch Way Junction
O4	Review the layout of the Riverview Drive/Todlaw Walk Junction
O5	Review the layout of the Riverview Drive/Netherview Avenue Junction
O7	Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer
O8	Review the layout of the A947/Stoneywood Brae Junction
O10	Review layout of the A947/McDonalds access road junction
O16	Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce
O25	Implement access only restrictions for general traffic on Victoria Street
O26	Implement one-way restrictions for general traffic on Victoria Street

4.4 Table 3 Options

The following options comprise Table 3.

Table 4-3: A947 Multi-Modal Corridor Study – Table 3 Options

AT3	Review the layout of Victoria Street/Pitmedden Road for pedestrians
AT23	Implement a bike hire scheme within Dyce.
AT45	Upgrade the Riverside Path to a high quality active travel route, including improvements to the surfacing of the route
PT5	Implement real time passenger information at key bus stops along the study corridor
O18	Consider options to reduce vehicle speeds on Bankhead Road
O24	Implement electric vehicle charging points at key locations within Dyce
AT46	Implement lighting on the Riverside Path

As the study developed, it was agreed with ACC that Option O18 – Consider options to reduce vehicle speeds on Bankhead Road – would no longer form part of the options to be considered by ACC in Table 3. Transport Scotland has now released further details regarding the proposed widespread implementation of 20mph speed limits in urban areas. The intentions of the 20mph strategy will be to identify a number of outcomes to assist in the further delivery of 20mph zones and limits on those roads where it is appropriate to do so. It seeks to reduce perceptions of road danger, encourage people to walk, wheel and cycle, and create more pleasant streets and neighbourhoods by providing a more equitable balance between different road users, thereby promoting inclusivity. Funding has been provided to review all city streets against set criteria to determine whether a reduced speed limit is appropriate. It is expected that further guidance will be provided on the instances when traffic calming might be required to support the reduced speed limits. Any future measures on Bankhead Road will therefore be considered on this basis.

4.5 Table 4 Options

The following options comprise Table 4.

Table 4-4: A947 Multi-Modal Corridor Study – Table 4 Options

AT1	Review the junction for active travel users at the A947/A90 slip road junction
AT2	Review visibility for cyclists at the B977/A90 slip road roundabout
AT7	Review signals at Forrit Burn Road bus gate to allow cyclists access
AT10	Widen on-road advisory cycle lane on Riverview Drive
AT11	Implement missing sections of on-road advisory cycle lane on Riverview Drive
AT12	Widen on-road advisory cycle lane on Stoneywood Road at Stoneywood Park junction
AT21	Implement cycle parking at key trip attractors in the study area
AT22	Promote Craibstone Park & Ride as a Park & Pedal facility
AT28	Implement dropped kerbs for cyclists to transfer between the carriageway and pavement at the northbound bus stop on the A947, north of the River Don
AT37	Implement dropped kerbs between Wellheads Drive shared use path and the carriageway
AT38	Review access restrictions on Market Street to allow for cargo bikes and recumbent cycles
AT39	Review access controls on off-road path between Waterton Road and Ruthriehill Road
O1	Increase enforcement of zigzag lines at zebra crossing on Victoria Street, specifically adjacent to Tesco
O12	Implement signage to encourage reverse parking at the shops on Victoria Street

The Preliminary Appraisal report noted that while Options AT10, AT11 and AT12 could be delivered as ‘quick wins’, on-road cycling infrastructure is not shown to influence modal shift and therefore it is considered that segregated cycling infrastructure should be promoted as part of this study. However, these options may provide interim opportunities to improve on-road cycling infrastructure in advance of further consideration of segregation in the study area. The continuing role of these options is considered later in this report.

4.6 Finalising Options for Detailed Appraisal

In advance of undertaking the Detailed Appraisal, the Table 2 options were subject to further review to identify any changes requiring consideration since the completion of the Preliminary Appraisal and the selection of these options by ACC for further development, appraisal and design.

4.6.1 Table 2 Option Sifting

This included an exercise to determine whether any options should be sifted prior to Detailed Appraisal. This considered specific aspects of deliverability for each of the options, to assess whether they should be subsequently considered as part of the appraisal. The exercise sought to establish if there are any deliverability barriers taking into account design requirements and existing conditions. It also sought to identify conflicting proposals or solutions which are dependent on each other.

Appendix C sets out in detail the process of preliminary option development for the Table 2 options, with **Table 4-5** below setting out the overall results of the Table 2 options review.

Table 4-5: Table 2 Options Review

Option Ref	Description	Retain for Detailed Appraisal/Sift
AT24	Improve active travel connectivity between the A947 study area and Aberdeen Airport/Heliport	SIFT
AT26	Improve active travel connectivity between the A947 study area and TECA	RETAIN
AT27	Improve active travel connectivity between the A947 study area and Kirkhill Industrial Estate	SIFT
AT31	Improve active travel links between the Riverside Path and housing within Dyce	RETAIN
AT33	Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road	RETAIN
AT35	Implement quiet route measures on the local road network to the west of the A947 via Bankhead Road, Wellheads Drive and Farburn Terrace to Dyce Rail Station	RETAIN
AT41	Improve active travel access to the retail park at the Bucksburn Roundabout	RETAIN
AT42	Review access to the Formartine and Buchan Way from within Dyce	SIFT
AT43	Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)	RETAIN
AT47	Implement with-flow segregated cycleway on the A947 between AWPR Junction and A947/A96 Junction	SIFT
AT48	Implement two-way segregated cycleway on the A947 between AWPR Junction and A947/A96 Junction	RETAIN
AT51	Implement with-flow segregated cycleway on Old Meldrum Road	RETAIN
AT52	Implement two-way segregated cycleway on Old Meldrum Road	RETAIN
AT55	Implement with-flow segregated cycleway on Gilbert Road	SIFT
AT56	Implement two-way segregated cycleway on Gilbert Road	SIFT

Option Ref	Description	Retain for Detailed Appraisal/Sift
AT58	Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport	RETAIN
AT61	Implement shared use path on Victoria Street	RETAIN
AT64	Implement shared use path on Old Meldrum Road	SIFT
AT65	Implement streetscape improvements and widened pavements along Mugiemoss Road	RETAIN
AT66	Implement shared use path on Gilbert Road	SIFT
PT2	Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor	RETAIN
PT9	Improve public transport connectivity between the A947 study area and Aberdeen Airport/Heliport	SIFT
PT10	Improve public transport connectivity between the A947 study area and Craibstone Park & Ride	SIFT
PT11	Improve public transport connectivity between the A947 study area and TECA	SIFT
PT12	Improve public transport connectivity between the A947 study area and Kirkhill Industrial Estate	SIFT
O2	Review the layout of the Victoria Street/Skene Place Junction	RETAIN
O3	Review the layout of the Riverview Drive/Balloch Way Junction	RETAIN
O4	Review the layout of the Riverview Drive/Todlaw Walk Junction	RETAIN
O5	Review the layout of the Riverview Drive/Netherview Avenue Junction	RETAIN
O7	Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer	RETAIN
O8	Review the layout of the A947/Stoneywood Brae Junction	RETAIN
O10	Review layout of the A947/McDonalds access road junction	RETAIN
O16	Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce	RETAIN
O25	Implement access only restrictions for general traffic on Victoria Street	RETAIN
O26	Implement one-way restrictions for general traffic on Victoria Street	RETAIN

The rationale for the sifting of the options identified above is shown below. Further detail on the design rationale for the sifting of these options is provided within **Appendix A**.

Table 4-6: Table 2 Options Review – Option Sifting Rationale

Option Ref	Description	Rationale for Sifting
AT24	Improve active travel connectivity between the A947 study area and Aberdeen Airport/Heliport	It was agreed with ACC during the sifting exercise that Option AT24 should be reassigned to Table 4 (Quick Wins) on the basis that the measures associated with the option are already well defined; supporting progression as a quick win, without the need for further appraisal.
AT27	Improve active travel connectivity between the A947 study area and Kirkhill Industrial Estate	This option promotes similar outcomes to Options AT24, AT26 and AT58 which are more targeted and specific.
AT42	Review access to the Formartine and Buchan Way from within Dyce	Improvement in access facilitated to F&B Way facilitated by multiple other Table 1 and 2 options.
AT47	Implement with-flow segregated cycleway on the A947 between AWPR Junction and A947/A96 Junction	Section specific options which broadly cover extent of the route are available across Tables 1-4 and are considered more deliverable when considered individually.
AT55	Implement with-flow segregated cycleway on Gilbert Road	Not feasible to achieve Cycling by Design absolute minimum segregation along route without removal of parking. Low moving traffic volumes and speeds would suggest mixed traffic street measures could be more effective here.
AT56	Implement two-way segregated cycleway on Gilbert Road	
AT64	Implement shared use path on Old Meldrum Road	Segregated facilities along Old Meldrum Road (Options AT51 and AT52) offer a higher Level of Service to cyclists and therefore will be retained over Option AT64.
AT66	Implement shared use path on Gilbert Road	Not feasible to achieve Cycling by Design absolute minimum shared use without removal of parking on one side. Low moving traffic volumes and speeds would suggest mixed traffic street measures could be more effective here.
PT9	Improve public transport connectivity between the A947 study area and Aberdeen Airport/Heliport	Following engagement with the client group, it was agreed that these standalone public transport options could be sifted. The Roads Hierarchy places greater emphasis on active travel and by delivering traffic calming and active travel improvements as captured under retained Table 1 and 2 options, benefits in terms of public transport attractiveness and journey time reliability will be realised. It is also noted that public transport improvements are reliant on commitment and buy-in from private operators.
PT10	Improve public transport connectivity between the A947 study area and Craibstone Park & Ride	
PT11	Improve public transport connectivity between the A947 study area and TECA	
PT12	Improve public transport connectivity between the A947 study area and Kirkhill Industrial Estate	

4.6.2 Final Options for Detailed Appraisal

In the process of preparing for the Detailed Appraisal and design of the remaining Table 2 options, some further minor modifications were made to some options to better reflect the opportunities they present for change on the A947 corridor. The table below sets out the final options – including rescoped options – that will be subject to Detailed Appraisal later in this report.

Table 4-7: Table 2 Options Review – Final Options For Detailed Appraisal

Option Ref	Description	Option Rescope
AT26	Improve active travel connectivity between the A947 study area and TECA	N/A
AT31	Improve active travel links between the Riverside Path and housing within Dyce	N/A
AT33	Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road	N/A
AT35a	Implement improvements to develop a mixed-traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae	Following a review of Option AT35, the wording of the option was redefined to broaden the scope from focusing on quiet route measures to active travel improvements. The option reference was updated to AT35a to reflect this change. In addition, with existing committed works being progressed separately by ACC, introduction of any new active travel measures on Farburn Terrace and Wellheads Drive will not be considered further as part of this study.
AT41a/b	Improve active travel access to the retail park at the Bucksburn Roundabout	Two variants are to be considered for this option in the appraisal and design. Option AT41a assumes the existing dual carriageway layout is retained and the existing northbound footway is upgraded to a shared use facility between the A947 crossing and the retail park. Option AT41b would involve A947 carriageway width reduction to one lane to facilitate a segregated two-way cycleway.
AT43	Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)	N/A
AT48a	Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North	In order to capture sections along the A947 which are not considered under other targeted active travel options and to promote an overall coherent and connected network, AT48 has been reworded to incorporate the evaluation of solutions which offer a high level of service between the Bucksburn Roundabout and Riverview Drive Roundabout North, through the implementation of new shared use and segregated cycleway facilities. This would enable active travel improvements along the entirety of Riverview Drive. The option reference has now been updated to AT48a to reflect this change.
AT51	Implement with-flow segregated cycleway on Old Meldrum Road	N/A
AT52	Implement two-way segregated cycleway on Old Meldrum Road	N/A
AT58	Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport	N/A

Option Ref	Description	Option Rescope
AT61a	Implement package of active travel measures on Victoria Street	As the urban centre of Dyce, implementation of a shared use path would bring a higher risk of conflict between users. Therefore, shared use is not considered appropriate on the primary residential and commercial section of Victoria Street. As a result of the recent reprioritisation of the A947 along Riverview Drive as part of the Roads Hierarchy revision, it is anticipated that there will be reduced traffic levels along Victoria Street with route reclassification. Despite the implementation of a shared use path being discounted, it is important to continue developing other active travel measures along Victoria Street to improve accessibility and active travel opportunities in the 'heart' of Dyce. AT61 has been reworded to capture a broader range of options for active travel improvements along Victoria Street. The option reference has now been updated to AT61a to reflect this change.
AT65	Implement streetscape improvements and widened pavements along Mugiemoss Road	N/A
PT2	Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor	N/A
O2	Review the layout of the Victoria Street/Skene Place Junction	N/A
O3	Review the layout of the Riverview Drive/Balloch Way Junction	N/A
O4	Review the layout of the Riverview Drive/Todlaw Walk Junction	N/A
O5	Review the layout of the Riverview Drive/Netherview Avenue Junction	N/A
O7	Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer	N/A
O8	Review the layout of the A947/Stoneywood Brae Junction	N/A
O10	Review layout of the A947/McDonalds access road junction	N/A
O16	Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce	N/A
O25	Implement access only restrictions for general traffic on Victoria Street	N/A
O26	Implement one-way restrictions for general traffic on Victoria Street	N/A

4.7 Table 1 Option Development

Development of the Table 1 options focused on the production of general arrangement (GA) drawings to outline the proposed layout. These GA drawings were produced against an OS base map and were developed in accordance with current design standards and best practice guidance. A high level of service and desirable minimum parameters were targeted as far as feasible in line with guidance including Cycling by Design (CbD) and the Design Manual for Roads and Bridges (DMRB). Where significant constraints were recognised, alternative solutions were considered and some localised relaxation of standards to absolute minimum parameters was adopted.

The options within Table 1 which focused on a review of current conditions along the A947 corridor were assessed by conducting site walkovers where data was collected using GIS tools. The data was analysed with a technical note produced for each option to summarise observations and recommendations.

A high-level costing exercise was undertaken to establish outline construction costs for the options developed. Optimism bias at 44% was included in the estimate to reflect the early stage of option development and account for risk and contingency.

The key design features, proposed risks and outline cost estimates for these options are detailed in a detailed Table 1 Design Technical Note, presented as **Appendix B**.

4.8 Options within Aberdeenshire Council area

In May 2024, ACC agreed with Aberdeenshire Council that no options traversing the local authority boundary would be subject to public and stakeholder consultation. This led to the following options being excluded from the consultation exercise discussed in Chapter 6:

- AT59 (Table 1) – Widen the shared use path on the east side of the A947 to the north of Riverview Drive; and
- AT43 (Table 2) – Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR).

While Option AT59 is located within the Aberdeen City boundary, the supporting design drawings produced demonstrate the linkage between this option and Option AT43 (which crosses into Aberdeenshire), so it was agreed that this option (while not subject to Detailed Appraisal on account of being in Table 1) would not be shown in the overall package of information for the consultation. While the AT43/AT59 tie-in was not highlighted during consultation, the existing National Cycle Route shared use path follows this alignment so there was still a tangible connection (for public context) between the improvements in Dyce and Dyce Drive.

With the approach taken above, consultation has therefore not informed the appraisal of Option AT43, but professional judgment has been employed to gauge the likely level of impact of this option (in terms of public acceptability) in Chapter 10.

4.9 Summary

This Chapter has summarised the review of the options that emerged from the Preliminary Appraisal stage and has confirmed the options that will be subject to Detailed Appraisal at this stage of the study.

Chapter 5 sets out the study Transport Planning Objectives.

5. Transport Planning Objectives

5.1 Introduction

This Chapter sets out the review of the study TPOs that has been undertaken in preparation for Detailed Appraisal.

At the previous stage of the study, six TPOs were initially developed using a bottom-up approach that focussed on developing objectives to address the identified problems, constraints and opportunities in the study area. The TPOs were also informed by way of a top-down assessment of their alignment with the national, regional and local transport policy and strategy framework.

The six TPOs were as follows:

- **TPO1** – Increase the modal share of walking on the A947 corridor for all journey types;
- **TPO2** – Increase the modal share of public transport on the A947 corridor for all journey types;
- **TPO3** – Increase the modal share of cycling on the A947 corridor for all journey types;
- **TPO4** – Improve east-west connectivity within Dyce to enhance walkability within the local area and promote improved accessibility for local movements;
- **TPO5** – Improve accessibility to the key transport hubs of Dyce Rail Station, Aberdeen Airport and Craibstone Park and Ride and key destinations including TECA by non-car modes; and
- **TPO6** – Ensure the main routes through the study area function in accordance with their role in the revised Roads Hierarchy.

As set out in STAG, TPOs should be refined as the appraisal progresses and more information becomes available. It notes that in advance of the Detailed Options Appraisal, TPOs should be finalised and, where appropriate, include a target which captures the nature and scale of the change.

The TPOs have been reviewed taking account of Transport Scotland guidance on the development of SMART TPOs.

5.2 Problems and Opportunities Review

Based on the PICOs analysis undertaken in 2022 at the previous stage of the study, a number of strategic problems and opportunities were identified within the study area. A commentary against each to evaluate continued applicability at the current (Detailed Appraisal) stage of the study is provided in the table below.

Table 5-1: Problems and Opportunities Review

Problem	Applicable (Y/N)	Commentary
F&B Way, including a lack of maintenance, a lack of signage and a number of access points not being accessible due to gates and barriers.	N	It was agreed with the Client Group at the previous stage of the study that options would not be generated for the F&B Way due to other studies being progressed on the route.
Declining bus patronage, with consultation findings suggesting barriers to increased public transport use including perceived long journey times to the city centre and the frequency and timetabling of services not being accessible for those working shift patterns.	N	Discussions with bus operators regarding other corridors in the region has indicated that patronage has recovered well from the COVID-19 pandemic, with recorded numbers above 2019 levels on some services. Data has been requested from the bus operators to determine trends for the A947 specifically. Whilst consultation findings indicated that there are perceived long journey times to the city centre from the study area, the evidence available indicates that bus journey times have been decreasing in recent years. Furthermore, journey times to the city centre are more significantly impacted by transport conditions on the A96 which is the subject of a separate study being progressed in parallel. It is also anticipated that the A96 will form one of the routes comprising the proposed Aberdeen Rapid Transit (ART) network.

Problem	Applicable (Y/N)	Commentary
		It was agreed with the Client Group that this study has limited influence on public transport connectivity as this would require commitment and buy-in from private operators. Furthermore, a new circular bus route has been introduced by Premier Coaches since the PICOs analysis was undertaken, which links Aberdeen International Airport with hotels within a two-mile radius and to the P&J Live arena (TECA), which is considered to address the identified problem to an extent. On this basis, the Detailed Appraisal stage of the study allows for a refocus on how any interventions to support public transport movements in the study area are articulated.
Active travel infrastructure – a lack of footway provision to match pedestrian desire lines; advisory cycle lanes being narrow and inconsistent and a limited number of appropriate crossings for pedestrians and cyclists throughout the study area.	Y	It is considered that issues with active travel infrastructure continue to be relevant in the context of the current study.
Driver behaviour – speeding, ignoring cycle provision, flouting 'no entry' signs and parking on double yellow lines.	N	It is considered that this is largely an enforcement issue. However, through improving the level of service for active travel users, the effects of driver behaviour on these groups would be reduced.
Maintenance of active travel infrastructure – including the surfaces of advisory cycle lanes, footways and the underpass at Millhill Brae and the Riverside Path.	N	It is considered that this is largely a maintenance issue that ACC will address as part of 'business as usual' activities.
Signage – lack of active travel signage along the corridor.	Y	It is considered that issues with active travel signage continue to be relevant in the context of the current study.
Monitoring – issues with active travel counters in the study area.	N	Whilst this is not a problem for the current study to address, accurate count data will be required in order to measure the performance of options against the TPOs and monitoring and evaluation proposals will be set out as part of the appraisal and OBC.
Opportunity	**Applicable (Y/N)**	**Commentary**
Locking in the benefits of the AWPR	Y	The opening of the AWPR allowed for the review of the roads hierarchy in Aberdeen. This led to the reclassification of the A947 within Dyce whereby the primary route is now via Riverview Drive rather than Victoria Street, creating increased opportunities for prioritising active travel modes on Victoria Street.
Policy context	Y	It is considered that the study continues to align with the national, regional and locally policy context, including support for more trips to be undertaken using sustainable modes of travel. Further synergy is provided between the corridor study and the emerging ACC LTS, which is currently subject to public consultation.
Bus service partnerships	N	No significant issues were identified at the previous stage of the study in terms of public transport operations on the study corridor.
Funding - £500m over the next five years for active travel infrastructure and £500m Bus Partnership Fund (BPF).	Y	It is considered that there is an opportunity to capitalise on the funding for active travel infrastructure that is available at a national level. In terms of the BPF, £12m was awarded to the North East Bus Alliance in June 2021 to progress the case for Aberdeen Rapid Transit (ART) in the region, however, the A947 has not been identified as an ART corridor. Nevertheless, establishment of the A96 as an ART route may provide wider benefits for public transport journeys on the A947 corridor, with these benefits potentially extending to the trips of users from Aberdeenshire, beyond the study area boundary at the AWPR junction.
Distances to work – the vast majority living within the study area travel less	Y	It is considered that there continues to be opportunities to encourage active travel use for journeys to work for those living

Problem	Applicable (Y/N)	Commentary
than 10km for work.		within the study area.
20-minute neighbourhood	Y	It is considered that there remains potential to adopt the 20-minute neighbourhood concept in Dyce.

5.3 TPO Review

The table below sets out a set of revised TPOs that are proposed based on the problems and opportunities review detailed above and the requirement to 'SMARTen' the TPOs prior to undertaking Detailed Appraisal.

Table 5-2: Revised Study TPOs

Preliminary Appraisal TPO	Revised TPO	Commentary/Rationale
TPO1 – Increase the modal share of walking on the A947 corridor for all journey types	**TPO1** – Increase the number of walking and wheeling trips in the study area by 20% within 5 years of project delivery (against a 2024 baseline)	• 20% target based on information available from automatic pedestrian and cycle counters in the study area in 2019, this would mean approximately 118,900 additional annual pedestrian trips in the study area. • 2024 baseline to be established. • Discussion required for baseline wheeling trips and monitoring of wheeling trips. • 5 years considered enough time for interventions to have contributed towards modal shift in the study area.
TPO2 – Increase the modal share of public transport on the A947 corridor for all journey types	**Remove**	• Declining bus patronage was identified as a problem due to journey times to the city centre from Dyce and due to difficulties accessing the airport and other key destinations in the west of Dyce from the east of Dyce. • Solutions for improving bus journey times to the city centre are considered to be focussed on the A96 route rather than the A947 as no significant operational problems were identified on the A947 corridor during the PICOs analysis. • It was agreed with the Client Group that this study has limited influence on public transport connectivity as this would require commitment and buy-in from private operators. Furthermore, a new circular bus route has been introduced by Premier Coaches since the PICOs analysis was undertaken, which links Aberdeen International Airport with hotels within a two-mile radius and to the P&J Live arena, which is considered to address the identified problem to an extent.
TPO3 – Increase the modal share of cycling on the A947	**TPO2** – Increase the number of cycling trips in the study	• 20% target based on information available from

Preliminary Appraisal TPO	Revised TPO	Commentary/Rationale
corridor for all journey types	area by 20% within 5 years of project delivery (against a 2024 baseline)	automatic pedestrian and cycle counters in the study area in 2019, this would mean approximately 6,935 additional annual cycle trips in the study area. • 2024 baseline to be established. • 5 years considered enough time for interventions to have contributed towards modal shift in the study area.
TPO4 – Improve east-west connectivity within Dyce to enhance walkability within the local area and promote improved accessibility for local movements	**Remove**	• Improving east-west connectivity is a way in which TPO1 and TPO2 will be delivered (i.e. improving east-west connectivity for active modes would be anticipated to increase the number of trips undertaken by walking, wheeling and cycling). • Proposals to SMARTen the TPO included incorporation of a time element (e.g. to achieve local trips to key destinations within a 20-minute walk or wheel time). The PICOs analysis highlighted that local trips to key destinations were already within a 20-minute cycle. Furthermore, achieving 20-minute walking trips to key destinations is not considered to be realistic in many cases due to the distances involved.
TPO5 – Improve accessibility to the key transport hubs of Dyce Rail Station, Aberdeen Airport and Craibstone Park and Ride and key destinations including TECA by non-car modes	**Remove**	• Aberdeen Airport – walking and cycling to the airport with luggage is unlikely and frequent JET 727 service is already in place, which provides good access by bus. • Dyce Rail Station, Craibstone Park and Ride and TECA – improving access to these destinations will be considered through the option development, appraisal and design process as a way of achieving increased walking, wheeling and cycling trips in the study area.

Preliminary Appraisal TPO	Revised TPO	Commentary/Rationale
TPO6 – Ensure the main routes through the study area function in accordance with their role in the revised Roads Hierarchy	**Remove**	• The A947 Multi-Modal Corridor Study – and the parallel studies being progressed by ACC on other corridors in the city – are being progressed in cognisance of the changes to priority routes introduced by the revision of the Roads Hierarchy in 2019. This reclassification led to the A947 now routeing via Riverview Drive, as opposed to directly through the centre of Dyce along Victoria Street. • The remaining 'Table 1' and 'Table 2' options under consideration at this stage of the study were previously assessed against this objective at the Preliminary Appraisal stage. Any options contravening the Roads Hierarchy principles would therefore not have been recommended for progression to the Detailed Appraisal and OBC stage of the study. With the study offering opportunity for practical implementation of options to capitalise on the changes introduced by the Roads Hierarchy, it is considered that no significant added value to the appraisal exercise would be brought by appraising the remaining options against an objective relating to safeguarding route function at this stage. On this basis, it is recommended that this TPO is no longer required to ensure robust appraisal of the remaining options. Any options ultimately making the OBC stage of the study will, by their scope, ensure that the A947 and Victoria Street function in accordance with their respective roles in the Roads Hierarchy.

5.4 SMART TPOs

The table below demonstrates how the revised study TPOs relate to the SMART principles.

Table 5-3: SMART TPOs

TPO	Specific	Measurable	Achievable	Realistic	Time Bound
TPO1 – Increase the number of walking and wheeling trips in the study area by 20% within 5 years of project delivery (against a 2024 baseline)	TPO relates to increasing the number of walking and wheeling trips within the settlement of Dyce for all journey purposes. Objective is specific in terms of geographic area and scale of change desired.	Issues with count technology were identified during the PICOs analysis. It has been agreed with ACC that a 2024 baseline should be sought as a basis for monitoring this TPO going forward. Monitoring information to be recorded yearly from the same source. The total number of walking trips could be recorded for a range of frequencies, including daily, monthly and on an annual basis. Discussion required for baseline wheeling trips and monitoring of wheeling trips.	There is strong support from governance at a local, regional and national level to increase the number of trips undertaken by active modes. Active mode provision is within the remit of ACC; control over delivery subject to factors such as land ownership and access permissions.	TPO is consistent with the overall aim of the A947 Multi-Modal Study. Problems and opportunities analysis highlighted that there is inadequate active travel infrastructure, high levels of car ownership and usage and lack of sustainable access to employment, education and key services and facilities in the study area.	Within 5 years of project delivery
TPO2 – Increase the number of cycling trips in the study area by 20% within 5 years of project delivery (against a 2024 baseline)	TPO relates to increasing the number of cycling trips within the settlement of Dyce for all journey purposes. Objective is specific in terms of geographic area and scale of change desired.	Issues with count technology were identified during the PICOs analysis. It has been agreed with ACC that a 2024 baseline should be sought as a basis for monitoring this TPO going forward. Monitoring information to be recorded yearly from the same source. The total number of cycling trips could be recorded for a range of frequencies, including daily, monthly and on an annual basis.	There is strong support from governance at a local, regional and national level to increase the number of trips undertaken by active modes. Active mode provision is within the remit of ACC; control over delivery subject to factors such as land ownership and access permissions.	TPO is consistent with the overall aim of the A947 Multi-Modal Study. Problems and opportunities analysis highlighted that there is inadequate active travel infrastructure, high levels of car ownership and usage and lack of sustainable access to employment, education and key services and facilities in the study area.	Within 5 years of project delivery

5.5 Summary

This Chapter has outlined the final TPOs for the study. It has demonstrated how the TPOs are SMART and this will support ACC in the future monitoring and evaluation of the TPOs. The following Chapter details the process of consultation and engagement.

6. Consultation and Engagement

6.1 Introduction

STAG notes that consultation and engagement are key elements of an appraisal and that this should ensure that the interests of stakeholders are considered in an inclusive, open, transparent and appropriate manner.

Involving and engaging people can have a range of benefits including:

- Building confidence in the study or process;
- Making people feel part of the decision-making process; and
- Achieving widespread support for proposals.

This Chapter provides an overview of the public and stakeholder engagement exercise that was undertaken as part of the Detailed Appraisal and outlines the key findings from the engagement. The engagement undertaken at this stage builds upon and supplements that undertaken at earlier stages of the study. The consultation exercise ran for four weeks between 17th May 2024 and 14th June 2024 and involved an online survey and a public drop-in event.

The *Consultation Results Outputs* located in **Appendix I** provides the full outputs from the online survey for responses by members of the public and organisations. The raw data has also been provided to ACC under separate cover.

6.2 Methodology

6.2.1 Online Consultation

Consultees accessed study information and the online survey through the Citizen Space page hosted on the ACC website. The consultation boards had information on the background to the study, work completed to date and an overview of the key features of the option packages being consulted upon. GIS maps were used to present the location of each option within a package and allowed for representation of how the different options interact with one another. CAD drawings were also available for certain options to provide more detail and aid a response.

Details of the in-person consultation event were also included on the page and an email address was provided for those who wished to contact the project team directly.

6.2.2 Survey

The platform also hosted the online survey which was used by consultees to provide feedback on the option packages (detailed below). The survey was hosted on Microsoft Forms.

The feedback form was developed to collate responses to inform the Detailed Appraisal. It sought views on:

- Agreement with the aims of the packages;
- Likelihood of the packages to increase sustainable travel;
- Any comments specifically on the individual options contained within the packages; and
- Any general comments on the packages as a whole.

Respondents were also asked a series of ‘About You’ questions to assess the representativeness of the sample.

Two versions of the survey were available depending if the respondent was a member of the public or responding on behalf of an organisation. The survey structure and topics were consistent but whilst the public version asked how the proposed packages would impact themselves, the organisation version asked how the proposed packages would impact on the operation of the organisation.

Printed versions of the surveys were available for those attending the in-person drop-in event.

6.2.3 Public Drop-In Event

An in-person public drop-in event was hosted at the Craighaar Hotel on Thursday 6 June 2024 between 16:00 and 20:00.

Figure 6-1: Public Consultation, Craighaar Hotel

The event was attended by representatives from AECOM and ACC. During the event, attendees were provided with the opportunity to look at hard copies of the consultation materials available online and discuss the study in greater depth with members of the project team. There were 14 attendees across the session.

As noted above, there were printed copies of the feedback form available for attendees to complete, and they were also directed to the online form (accessed via QR code) if they wished to give feedback outwith the event. While no attendees wished to complete a paper copy of the feedback form during the event, views expressed during the session have been captured in the analysis of the options, in terms of public acceptability (Chapter 10).

6.2.4 School Engagement

An interactive session was held with pupils at Stoneywood Primary School on Wednesday 8 May 2024. This highlighted the role of a transport planner and initiated high-level group discussions around the key problems and opportunities relating to transport in the study area.

6.2.5 Consultation Promotion

In order to inform people about the consultation, several methods were used to promote the online survey and public drop-in event including:

- Social media posts from ACC and Nestrans;
- Emails direct to key stakeholders; and
- Emails direct to Community Councils on the study corridor (Dyce & Stoneywood, Bucksburn & Newhills and Danestone).

Local Elected Members (ACC Councillors), MSPs and MPs were also contacted to notify them about the consultation.

6.2.6 Packages for Consultation

For the purposes of consultation, five option packages were created to support interpretation of the options in which feedback was being sought. These were:

1. A947 (West) Package.
2. Riverview Drive Package.
3. Victoria Street Package.
4. Targeted Local Improvements Package.
5. Strategic Corridor Improvements Package.

The description of each of the options progressing to detailed appraisal (as set out in Chapter 4) within the packages being consulted on was updated to make the scope of the option clearer and thus more consumable for the consultees.

Table 6-1: Option Descriptions for Consultation

Option Ref	Description	Updated Description for Consultation Purposes	Consultation Package
AT26	Improve active travel connectivity between the A947 study area and TECA	Introduce wayfinding signage and resurface and widen the existing core path network at The Event Complex Aberdeen (TECA)	A947 (West) Package
AT31	Improve active travel links between the Riverside Path and housing within Dyce	Implement a new footpath to connect the Riverside Path and housing in Dyce at Todlaw Walk junction	Riverview Drive Package
AT33	Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road	Implement a contra-flow cycle lane along Station Road to improve active travel connectivity with Dyce Rail Station	Victoria Street Package
AT35a	Implement improvements to develop a mixed-traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae	Implement improvements to develop a mixed-traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae	A947 (West) Package
AT41a	Improve active travel access to the retail park at the Bucksburn Roundabout	Widen the existing shared use footway to the west of the A947 near the retail park at Bucksburn Roundabout	A947 (West) Package
AT41b	Improve active travel access to the retail park at the Bucksburn Roundabout	Implement a two-way segregated cycle track to the west of the A947 near the retail park at Bucksburn Roundabout	A947 (West) Package

Option Ref	Description	Updated Description for Consultation Purposes	Consultation Package
AT48a	Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North	Implement new shared use and segregated cycle track facilities on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North	Strategic Corridor Improvements Package
AT51	Implement with-flow segregated cycleway on Old Meldrum Road	Implement with-flow segregated cycleway on Old Meldrum Road	Targeted Local Improvements Package
AT52	Implement two-way segregated cycleway on Old Meldrum Road	Implement two-way segregated cycleway on Old Meldrum Road	Targeted Local Improvements Package
AT58	Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport	Implement shared use footway on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport	Strategic Corridor Improvements Package
AT61a	Implement package of active travel measures on Victoria Street	Implement shared use footways and mixed traffic street measures on Victoria Street	Victoria Street Package
AT65	Implement streetscape improvements and widened pavements along Mugiemoss Road	Implement widened footways along Mugiemoss Road	Targeted Local Improvements Package
PT2	Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor	Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor	Strategic Corridor Improvements Package
O2	Review the layout of the Victoria Street/Skene Place Junction	Implement a one-way system along Station Road and the adjacent streets	Victoria Street Package
O3	Review the layout of the Riverview Drive/Balloch Way Junction	Increase the kerb radii at the Riverview Drive/Balloch Way Junction to improve pedestrian accessibility	Riverview Drive Package
O4	Review the layout of the Riverview Drive/Todlaw Walk Junction	Increase the kerb radii at the Riverview Drive/Todlaw Walk Junction to improve pedestrian accessibility	Riverview Drive Package
O5	Review the layout of the Riverview Drive/Netherview Avenue Junction	Increase the kerb radii at the Riverview Drive/Netherview Avenue Junction to improve pedestrian accessibility	Riverview Drive Package
O7	Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer	Implement a splitter island at the A947/Stoneywood Road Junction at Co-op/Marks and Spencer to prevent illegal turning manoeuvres	Targeted Local Improvements Package
O8	Review the layout of the A947/Stoneywood Brae Junction	Increase the existing taper at the A947/Stoneywood Brae Junction to reduce vehicle speeds	Targeted Local Improvements Package
O10	Review layout of the A947/McDonalds access road junction	Review layout of the A947/McDonalds access road junction	A947 (West) Package
O16	Implement package of measures to support implementation of a 20-minute	Implement package of measures to support implementation of a 20-minute	Strategic Corridor Improvements Package

Option Ref	Description	Updated Description for Consultation Purposes	Consultation Package
	neighbourhood in Dyce	neighbourhood in Dyce	
O25	Implement access only restrictions for general traffic on Victoria Street	Implement access only restrictions for general traffic on Victoria Street	Victoria Street Package
O26	Implement one-way restrictions for general traffic on Victoria Street	Implement one-way restrictions for general traffic on Victoria Street	Victoria Street Package

6.3 Key Findings

6.3.1 Public Drop-In Event

As noted above, 14 people attended the public drop-in event at the Craighaar Hotel. A summary of the key points of feedback are as follows:

- General support for the principles of the study and the rationale behind the composition of the option packages.
- Concern about parking on residential streets by offshore workers for prolonged periods of time.
- Business representation identified a significant concern relating to the options involving restriction on access to Victoria Street – previous traffic management work in the area was cited as having adversely affected trade.
- Concern about impact on surrounding residential streets in the event Victoria Street was made one-way or access only.
- Concern about articulated HGVs turning off Riverview Drive into Burnside Drive, a residential street, to access Farburn Industrial Estate. It was suggested that this is due to the position of the current wayfinding signage on Riverview Drive.

6.3.2 Online Survey

6.3.2.1 Introduction

The following sections present the results of the online survey. The results have been separated for responses from members of the public and from organisations.

A total of 54 responses were received from members of the public, with seven organisations responding to the consultation. The extent of support for the options from organisations in particular should therefore be treated with caution.

6.3.2.2 A947 (West) Package

The table below outlines respondents' level of support for the options that make up the A947 (West) Package.

Table 6-2: A947 (West) Package Consultation Feedback

Option	Type of Respondent	Strongly Agree	Agree	Disagree	Strongly Disagree	Neutral
Introduce wayfinding signage and resurface and widen the existing core path network at The Event Complex Aberdeen (TECA)	Members of Public	21.2%	32.7%	17.3%	17.3%	11.5%
	Organisations	28.6%	28.6%	0%	14.3%	28.6%
Implement improvements to develop a mixed traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae	Members of Public	20.8%	26.4%	20.8%	24.5%	7.5%
	Organisations	0%	14.3%	0%	42.9%	42.9%
Widen the existing shared use footway to the west of the A947 near the retail park at Bucksburn Roundabout	Members of Public	25.0%	28.8%	15.4%	17.3%	13.5%
	Organisations	0%	0%	14.3%	57.1%	28.6%
Implement a two-way segregated cycle track to the west of the A947 near the retail park at Bucksburn Roundabout	Members of Public	32.1%	18.9%	15.1%	30.2%	3.8%
	Organisations	0%	0%	14.3%	57.1%	28.6%
Review layout of the A947/McDonalds access road junction	Members of Public	36.5%	19.2%	17.3%	17.3%	9.6%
	Organisations	0%	0%	14.3%	42.9%	42.9%

- Members of the public were largely in agreement with the options contained within this package. The option to review the layout at the A947/McDonalds access road junction received the greatest support with 55.7% of respondents agreeing in total. Implementation of a two-way segregated cycle track (to the west of the A947) received mixed views by members of the public as while 32.1% of respondents stated they strongly agreed with this option, a similar proportion of respondents (30.2%) stated they strongly disagreed with the option.
- Organisations largely disagreed with the options contained within this package. Introducing improvements to the active travel network at TECA was the most positively received option with 57.2% of organisations stating they strongly agreed or agreed with the option. Over half of organisation respondents strongly disagreed with options relating to widening of the existing shared use footway to the west of the A947 and implementation of a two-way segregated cycle track to the west of the A947.

Additional comments on the individual options that make up the A947 (West) Package are summarised and outlined below.

- Support for measures which seek to make the environment safer for active travel users as high vehicle volumes within the Dyce area can make walking, wheeling and cycling feel unsafe.

- Concerns were cited that existing active travel infrastructure is underutilised and the relative low number of users does not warrant further investment.
- Suggestions that additional infrastructure should be included such as the planting of trees to further segregate active travel users from the main carriageway. There was also support for increased wayfinding signage.

6.3.2.3 Riverview Drive Package

The table below outlines respondents' level of support for the options that make up the Riverview Drive Package.

Table 6-3: Riverview Drive Package Consultation Feedback

Option	Type of Respondent	Strongly Agree	Agree	Disagree	Strongly Disagree	Neutral
Implement a new footpath to connect the Riverside Path and housing in Dyce at Todlaw Walk junction	Members of Public	30.8%	32.7%	23.1%	7.7%	5.8%
	Organisations	14.3%	28.6%	14.3%	28.6%	14.3%
Increase the kerb radii at the Riverview Drive/Balloch Way Junction to improve pedestrian accessibility	Members of Public	26.4%	30.2%	17.0%	15.1%	11.3%
	Organisations	0%	0%	14.3%	42.9%	42.9%
Increase the kerb radii at the Riverview Drive/Todlaw Walk Junction to improve pedestrian accessibility	Members of Public	26.9%	30.8%	17.3%	15.4%	9.6%
	Organisations	0%	0%	14.3%	42.9%	42.9%
Increase the kerb radii at the Riverview Drive/Netherview Avenue Junction to improve pedestrian accessibility	Members of Public	28.8%	28.8%	17.3%	17.3%	7.7%
	Organisations	0%	0%	14.3%	42.9%	42.9%

- Members of the public were largely in agreement with the options contained within this package. Implementation of a new footpath to connect the Riverside Path to Dyce housing was the most positively received option with 63.5% agreeing in total.
- Organisations largely disagreed with the options contained within this package. The only option positively received by organisations was implementation of the new footpath to connect the Riverside Path to Dyce housing, with 42.9% agreeing overall . There was no support expressed for the remaining options within the package.

Additional comments on the individual options that make up the Riverview Drive Package are summarised and outlined below.

- Opportunities to make the built environment more accessible through implementation of dropped kerbs and widening of walkways to allow wheelchairs, prams and mobility scooters with improved access is welcomed.
- Demand for further crossing opportunities over Riverview Drive.
- Suggestion that Riverview Drive retains its 40mph speed limit in order to support its function as a key road within Dyce, particularly if other roads are being restricted as per other proposed options.
- One comment noted concerns that a reduction of junction radii would cause increased problems for delivery vehicles travelling along the route.

6.3.2.4 Victoria Street Package

The table below outlines respondents' level of support for the options that make up the Victoria Street Package.

Table 6-4: Victoria Street Package Consultation Feedback

Option	Type of Respondent	Strongly Agree	Agree	Disagree	Strongly Disagree	Neutral
Implement a contra-flow cycle lane along Station Road to improve active travel connectivity with Dyce Rail Station	Members of Public	22.6%	17.0%	11.3%	47.2%	1.9%
	Organisations	0%	0%	0%	71.4%	28.6%
Implement shared use footways and mixed traffic street measures on Victoria Street	Members of Public	22.6%	11.3%	15.1%	43.4%	7.5%
	Organisations	0%	0%	0%	71.4%	28.6%
Implement a one-way system along Station Road and the adjacent streets	Members of Public	24.5%	15.1%	13.2%	43.4%	3.8%
	Organisations	0%	0%	0%	71.4%	28.6%
Implement access only restrictions for general traffic on Victoria Street	Members of Public	21.2%	9.6%	13.5%	51.9%	3.8%
	Organisations	0%	0%	0%	71.4%	28.6%
Implement one-way restrictions for general traffic on Victoria Street	Members of Public	18.9%	11.3%	9.4%	56.6%	3.8%
	Organisations	0%	0%	0%	71.4%	28.6%

- For each option in this package, more than half of responses from members of the public expressed disagreement. Implementation of a one-way system on Victoria Street received the lowest level of public support, with 56.6% of responses strongly disagreeing with this option.
- Organisations overwhelmingly (strongly) disagreed with the options contained within this package, with no support expressed for any of the proposed interventions.

Additional comments on the individual options that make up the Victoria Street Package are summarised and outlined below.

- Significant concerns from organisations and members of the public that the proposed one-way restriction along Victoria Street would negatively impact local businesses and services as a result of lost footfall.
- Concerns that vehicle restrictions along Victoria Street may displace vehicles onto other nearby roads which may not be suitable for an increase in traffic volume. Also concern this may also lead to safety concerns near schools.
- Suggestions that reduced vehicle speeds and increased enforcement to address illegal parking – and generally more parking restrictions – would create a better environment for active travel users along Victoria Street.

6.3.2.5 Targeted Local Improvements Package

The table below outlines respondents' level of support for the options that make up the Targeted Local Improvements Package.

Table 6-5: Targeted Local Improvements Package Consultation Feedback

Option	Type of Respondent	Strongly Agree	Agree	Disagree	Strongly Disagree	Neutral
Implement with-flow segregated cycleway on Old Meldrum Road	Members of Public	26.0%	22.0%	26.0%	20.0%	6.0%
	Organisations	0%	0%	0%	71.4%	28.6%
Implement two-way segregated cycleway on Old Meldrum Road	Members of Public	25.0%	19.2%	19.2%	23.1%	13.5%
	Organisations	0%	0%	0%	57.1%	42.9%
Implement widened footways along Mugiemoss Road	Members of Public	25.0%	26.9%	21.2%	17.3%	9.6%
	Organisations	0%	0%	0%	57.1%	42.9%
Implement a splitter island at the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer to prevent illegal turning manoeuvres	Members of Public	36.0%	30.0%	8.0%	14.0%	12.0%
	Organisations	0%	0%	0%	57.1%	42.9%
Increase the existing taper at the A947/Stoneywood Brae Junction to reduce vehicle speeds	Members of Public	25.0%	15.4%	25.0%	21.2%	13.5%
	Organisations	0%	0%	0%	57.1%	42.9%

- There was generally a variation in opinion amongst members of the public for the options in this package, though around two-thirds of respondents expressed support for the option seeking to prevent illegal turning manoeuvres at the A947/Stoneywood Road Junction at the shops.
- Organisations overwhelmingly (strongly) disagreed with the options contained within this package, with no support expressed for any of the proposed interventions. The with-flow segregated cycleway on Old Meldrum Road demonstrated a particular lack of support.

Additional comments on the individual options that make up the Targeted Local Improvements Package are summarised and outlined below.

- It was suggested that improved vehicle speed management would encourage greater active travel use, particularly for cyclists who are less confident.
- Concerns were cited that existing active travel infrastructure is underutilised and the relative low number of users does not warrant further investment.

6.3.2.6 Strategic Corridor Improvements Package

The table below outlines respondents' level of support for the options that make up the Strategic Corridor Improvements Package.

Table 6-6: Strategic Corridor Improvements Package Consultation Feedback

Option	Type of Respondent	Strongly Agree	Agree	Disagree	Strongly Disagree	Neutral
Implement new shared use and segregated cycle track facilities on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North	Members of Public	32.7%	17.3%	23.1%	19.2%	7.7%
	Organisations	14.3%	0%	0%	57.1%	28.6%
Implement shared use footway on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport	Members of Public	29.4%	31.4%	13.7%	17.6%	7.8%
	Organisations	14.3%	14.2%	0%	42.9%	28.6%
Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor	Members of Public	27.5%	15.7%	25.5%	23.5%	7.8%
	Organisations	14.3%	0%	0%	57.1%	28.6%
Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce	Members of Public	30.8%	9.6%	17.3%	26.9%	15.4%
	Organisations	14.3%	0%	0%	57.1%	28.6%

- There was generally a variation in opinion amongst members of the public for the options in this package, though the option to implement a shared use footway on Dyce Drive was positively received. There was notably less support for the implementation of measures to support establishment of a 20-minute neighbourhood in Dyce.
- Organisations largely disagreed with the options contained within this package, though there was a level of support expressed for the option to implement the shared use footway on Dyce Drive. Organisations otherwise overwhelmingly (strongly) disagreed with the other options contained within this package.

Additional comments on the individual options that make up the Strategic Corridor Improvements Package are summarised and outlined below.

- Some comments supported improved access to Kirkhill Industrial Estate and Aberdeen International Airport, however a similar number of comments stated that active travel connections to this area were sufficient and did not warrant further investment.
- One comment supported the implementation of a 20-minute neighbourhood concept in Dyce, noting that the area was relatively self-contained so would be ideally suited. It was suggested that Dyce could be a case study for further 20-minute neighbourhoods within the wider North East region.

6.3.2.7 Overall Agreement with Proposed Packages

The table below outlines respondents' views on the overall transport strategy for the A947 corridor.

Table 6-7: Views on Overall A947 Transport Strategy

	Strongly Agree	Agree	Disagree	Strongly Disagree	Neutral	Other
Members of Public	28.8%	19.2%	13.5%	30.8%	5.8%	1.9%
Organisations	0%	0%	0%	71.4%	28.6%	0%

- Just under half (48.0%) of those responding as a member of the public strongly agree (28.8%) or agree (19.2%) with the overall transport strategy for the A947 corridor. Almost one-third (30.8%) strongly disagree with the overall strategy with a further 13.5% disagreeing.
- Organisations were notably against the overall strategy for the A947 corridor as 71.4% of organisations stated they strongly disagree. No organisations strongly agreed or agreed with the strategy, though the low sample size should continue to be borne in mind when drawing these conclusions.

Comments on the overall transport strategy for the A947 are summarised and outlined below.

- There was support for an improved environment for making walking, wheeling and cycling safer and easier to do. In particular further segregation of pedestrians and cyclists is welcomed to reduce possible collisions. One further comment noted that active travel proposals need to be joined up.
- Significant concerns from organisations and members of the public that the proposed one-way restriction along Victoria Street would negatively impact local businesses and services as a result of lost footfall.
- Concerns were cited that existing active travel infrastructure is underutilised and the relative low number of users does not warrant further investment.
- One comment noted the importance of ensuring equestrians and their specific needs are included in any further design work. Recently published data highlighted that a lack of accessible paths suitable for equestrians was a key reason for the reduction in horse ownership.

6.4 Dyce & Stoneywood Community Council

A written response was received by Dyce & Stoneywood Community Council (DSCC) following the conclusion of the public consultation.

DSCC confirmed that, overall, they agreed with the overall transport strategy for the A947 corridor and provided the following feedback on the consultation packages. No specific comments were provided on the A947 (West) Package.

Riverview Drive Package

- There was strong agreement for implementing a new footpath to connect the Riverside Path and housing in Dyce at the Todlaw Walk junction – it was thought that this would greatly enhance pedestrian access to the River Don path.
- There was agreement for increasing kerb radii at the Riverview Drive junctions with Balloch Way, Todlaw Walk and Netherview Avenue, but it was thought that these should be lower priority options if funding is an issue.

Victoria Street Package

- DSCC stated that they disagreed with the option to implement a contra-flow cycle lane along Station Road to improve active travel connectivity with Dyce Rail Station because the road is too narrow with the current parking arrangements.

- There was disagreement expressed for the option to implement a one-way system along Station Road and the adjacent streets because it was felt too much traffic will be diverted to Skene Place and the unnamed road by the Spider's Web pub – this was said to be too narrow with poor visibility at the junction with Station Road.
- It was stated that more information was needed to fully gauge the effect of mixed traffic street measures on Victoria Street.

Targeted Local Improvements Package

- There was strong agreement for the option to implement a splitter island at the A947/Stoneywood Road Junction at Co-op/Marks and Spencer to prevent illegal turning manoeuvres – it was felt that there are currently too many dangerous and irresponsible drivers making illegal right turns in this location at present.

Strategic Corridor Improvements Package

- While there was agreement for the option to implement new shared use and segregated cycleway facilities on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North, it was stated that this does not appear to be a feasible option without considerable expense.
- There was disagreement on the need to conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor, with DSCC stating that the density of buses on this section of road does not justify this as an option (unlike in the city centre).
- It was stated that more information was needed to fully understand the potential for a 20-minute neighbourhood in Dyce.

Additional comments provided included:

- Tension between pedestrians and cyclists on shared use paths.
- Cyclists who travel to/from their places of work tend to travel at high speeds so this would exacerbate the risk of collisions with pedestrians (adults and children). The consequences of such collisions could be major where roads run alongside these footways.
- DSCC observed that a shared use footway already exists to the west of Mill Park Crescent in Stoneywood, however this has rarely been used by cyclists. This portion of footway also contains a bus stop so there is a risk of cyclists colliding with pedestrians (adults and children) in the process of them boarding and alighting buses.
- A further concern cited related to junctions of footpaths and shared use footways – DSCC queried how such junctions would be managed so that collisions between pedestrians (adults and children) and cyclists already on the footways are avoided.

A number of other comments were provided by DSCC on the other options not subject to direct consultation to inform the Table 2 option appraisal – these have been provided to ACC under separate cover.

6.5 Aberdeen Cycle Forum

Aberdeen Cycle Forum (ACF) submitted a written response to the consultation on 30 June 2024. ACF stated that they welcomed the study objectives to increase active travel (walking, wheeling and cycling) and offered the following feedback:

- **A947 (West) Package:** *"we welcome the majority of measures. We question whether resurfacing and widening of paths around TECA would represent value for money and would rather see resources directed to improvements to provide separation from traffic. If existing paths at TECA are below the usual standard width, it is also unlikely that levels of usage are particularly high or capacity is an issue."*
- **Riverview Drive Package:** *"we welcome the proposed measures to increase (should that be decrease?) kerb radii at certain junctions to better serve pedestrians and change priority in favour of active travel at others."*
- **Victoria Street Package:** *"we note the proposal for a mixed traffic street (in combination with shared-use at either end). Significant reductions in the speed and volume of traffic would be required to make*

this a suitable location for a mixed traffic street. Also while two different solutions are offered (mixed traffic street in the centre changing to shared-use at either end), consistency of approach would be ideal."

- **Targeted Local Improvements Package:** *"Stoneywood (M&S, Co-op) junction. We previously raised safety concerns about the road layout here and would welcome improvements, keeping in mind that some cyclists will remain on the carriageway here even if an off-road alternative is provided, and so pinch-points should be avoided."*
- **Strategic Corridor Improvements Package:** *"we welcome most of what is presented, except to note that someone cycling the full length of the corridor as shown here would transition between shared-use and cycle-track nine times."*
- *"Under 'other options being considered' we note that a bike hire scheme within Dyce is listed. This seems ambitious in a relatively small community and we are unsure how a scheme might operate or be financially viable."*

6.6 Summary

This Chapter has provided an overview of the public and stakeholder engagement exercise that was undertaken as part of the Detailed Appraisal, including the methodology adopted and the key findings. This will be used to assess the performance of the options in terms of Public Acceptability in Chapter 10. The following Chapter discusses the approach to the Detailed STAG-Based Appraisal of options.

7. Approach to Appraisal

7.1 Introduction

This Chapter outlines the approach to the Detailed STAG-based Appraisal. As set out in Chapter 4, a revised list of options from Table 2 were identified – and subsequently further developed – for the purposes of Detailed Appraisal.

7.2 Do Minimum

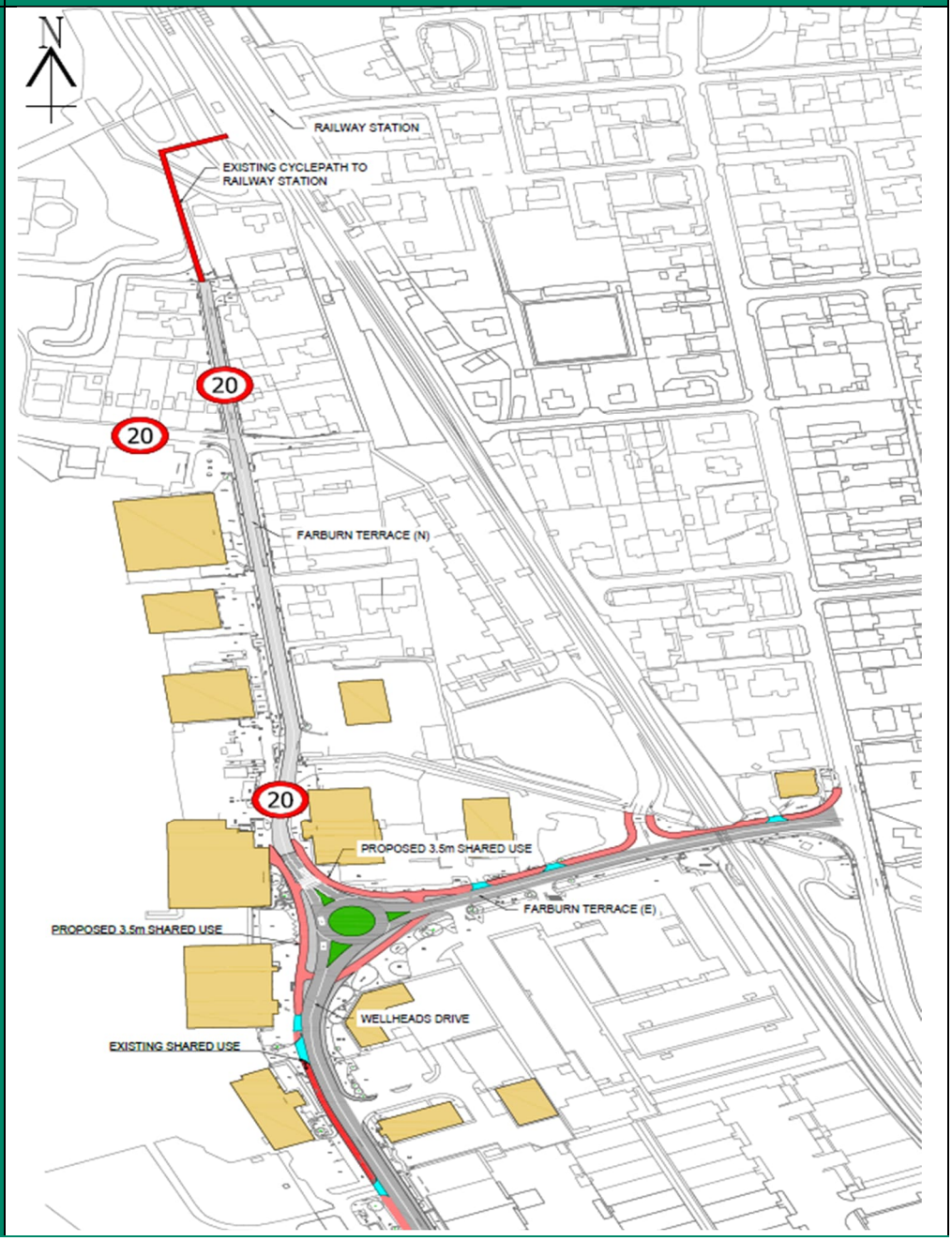
In line with STAG, all generated options must be appraised against a Do-Minimum scenario. Transport Scotland defines the Do Minimum in STAG as:

"the most likely transport situation over the course of the appraisal period if no intervention were to occur…The do-minimum should also include minor changes which can be expected to be carried out as conditions deteriorate, should the proposed interventions not go ahead. These improvements should not be significant, with any significant changes considered as an option in their own right as part of Option Generation, Sifting and Development."

The Do Minimum for this study assumes the interventions presented below are in place.

Table 7-1: Committed Transport Projects Relevant to the Study

Scheme	Description
Farburn Terrace Cycle and Pedestrian Improvement	• As part of ACC's Active Travel Action Plan, ACC is progressing improvements in accessibility for pedestrians and cyclists to and from Dyce Rail Station, Aberdeen International Airport and the surrounding business and residential areas of Dyce. • Farburn Terrace and in particular its roundabout with Wellheads Drive, have been identified as a missing link for active travel between the existing cycleway on Wellheads Drive and Dyce Rail Station. • ACC has secured funding from Sustrans and Nestrans to develop a detailed design for shared use cycleways along Wellheads Drive, around the existing roundabout and along Farburn Terrace to Victoria Street. • It is understood that work to deliver this project is ongoing. • An overview plan of the scheme is shown below.

Scheme	Description
	

7.3 Appraisal Overview

The Detailed Appraisal stage considers appraisal of the options against:

- TPOs;
- STAG Criteria (Environment; Climate Change; Health, Safety and Wellbeing; Economy; and Equality and Accessibility);
- Deliverability Criteria; and
- Cost to Government.

In addition, consideration has also been given to Statutory Impact Assessment (SIA) criteria.

The Detailed Appraisal appraises each option using the seven-point assessment scale, scoring the options from Major Positive Impact to Major Negative Impact. The seven-point scale of scoring is set out in the table below

and has been used to assess the option performance against the study TPOs, STAG Criteria and SIAs. Deliverability has been assessed on the basis of low, medium or high risk.

Table 7-2: STAG Seven-Point Scoring Summary

Impact	Description
Major positive impact (+3)	These are benefits or positive impacts which, depending on the scale of benefit or severity of impact, should be a principal consideration when assessing an option's eligibility for funding.
Moderate positive impact (+2)	The option is anticipated to have only a moderate benefit or positive impact. Moderate benefits and impacts are those which taken in isolation may not determine an option's eligibility for funding but taken together could do so.
Minor positive impact (+1)	The option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting but are not likely to contribute materially to determining whether an option is funded or otherwise.
Neutral impact (0)	The option is anticipated to have no or negligible benefit or negative impact.
Minor negative impact (-1)	The option is anticipated to have only a minor cost or negative impact. Minor costs/negative impacts are those which taken in isolation may not determine an option's eligibility for funding but taken together could do so.
Moderate negative impact (-2)	The option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for funding but taken together could do so.
Major negative impact (-3)	These are costs or negative impacts which, depending on the scale of cost or severity of impact, should be a principal consideration when assessing an option's eligibility for funding.

7.4 TPOs

Each of the remaining options in Table 2 has been assessed in terms of their performance against the study TPOs set out in Chapter 5.

7.5 STAG Criteria

7.5.1 Environment

A high-level qualitative review of each of the sub-criteria within the Environment criterion has been undertaken for each option and the potential environment implications that could arise from the construction and operation of the options has been noted.

The Environment appraisal is limited to a high-level desk-based review of the options, a review of aerial mapping and online free commercially available data and a review of published character assessments (landscape). No site surveys have been undertaken. The Environment appraisal broadly follows the structure of the latest STAG, taking into consideration the requirements set out within the January 2022 Managers' Guide document. It should be noted, however, that the Technical Database has not yet been updated to reflect the changes as set out within the Managers' Guide document and, as such, the scope and method has been adapted to the study, whilst remaining proportionate to the type and scale of measures proposed. Existing conditions are set out within **Appendix G**.

The Environment appraisal has involved the following key steps:

- Analysis of the site and context, definition of the extent of the study, and identification and description of the receptors that have the potential to be affected by the options proposed;
- Appreciation of the nature of the proposed options;
- Appraisal of the potential changes and implications to the existing environmental receptors; and
- Development of next steps and opportunities to consider in the design evolution in parallel with an environmental assessment process.

The Environment sub-criteria is outlined in the table below alongside a brief description of the approach adopted.

Table 7-3: Environmental Sub-Criteria at Detailed Appraisal Stage

Sub-Criteria	Description
Biodiversity and Habitats	Simple, qualitative appraisal of biodiversity, by identifying the presence of designated sites in the study area – Special Areas of Conservation (SAC), Special Protection Areas (SPA), Local Nature Reserves (LNR) and Sites of Special Scientific Interest (SSSI) – and identifying the potential for significant effects on these sites or the species they support.
Geology and Soils	Identification of any sites of particular geological importance and a qualitative assessment of the degree to which the option may affect such sites. A qualitative assessment of the likely impact on soils, including any displacement of soils within agricultural areas.
Land Use	A qualitative assessment of potential changes in land use within the study area, including to agricultural or forestry land.
Water Quality, Drainage and Flooding	A qualitative assessment of the sensitivity of the water environment within the study area.
Air Quality	Qualitative assessment considering potential changes in local emissions (CO_2 and PM_{10}) arising from the delivery of each option. Full quantification of air quality impacts will be undertaken to determine effect at a later stage in the design process. However, benefits arising from improved air quality as a result of increased rates of walking and cycling is quantified in the appraisal using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). A full AMAT assessment is included as Appendix H.
Historic Environment	Identification of the relevant historic designations in the study area and a qualitative assessment of the likely impact of each option on the importance and integrity of historic environment resources and their setting.
Landscape	A qualitative assessment of both the landscape character and quality, and any specific designations noted.
Noise and Vibration	Qualitative assessment considering potential increases or decreases in noise levels arising from the delivery of each option. Full quantification of noise impacts will be undertaken to determine effect on specific sensitivity receptors at a later stage in the design process. However, benefits arising from reduced noise as a result of increased rates of walking and cycling is quantified in the appraisal using AMAT.

Whilst much of the environmental consideration is still qualitative in nature where a quantitative assessment is not feasible, the assessment is more detailed at the Detailed Appraisal stage. It is, however, important to note that a full impact assessment of environmental aspects has not been undertaken.

7.5.2 Climate Change

The assessment of Climate Change considers the performance of the options against the three Climate Change sub-criteria: Greenhouse Gas Emissions, Vulnerability to the Effects of Climate Change and Potential to Adapt to the Effects of Climate Change.

Whilst a qualitative approach has largely been adopted for the assessment of Greenhouse Gas Emissions and the potential change in CO_2 emissions for each option, benefits arising from reduced greenhouse emissions as a result of increased rates of active travel have been quantified in the appraisal using AMAT. A full AMAT assessment included as **Appendix H**.

7.5.3 Health, Safety and Wellbeing

The assessment of Health, Safety and Wellbeing considers the performance of the options against the five Health, Safety and Wellbeing sub-criteria as defined in the table below.

Table 7-4: Health, Safety and Wellbeing Sub-Criteria at Detailed Appraisal Stage

Sub-Criteria	Description
Accidents	Consideration is given as to whether each option would have any measurable impact on the number of transport-related accidents and/or the severity of transport-related accidents. AMAT is used to quantify the accident benefits from increased use of walking and cycling.
Security	Consideration is given to the impacts of each option on pedestrians, cyclists (and stored/secured cycles) and public transport users. The impact of each option on vulnerable sections of the community is taken into account, including children, the elderly or women travelling alone. The adopted approach to assess security is largely qualitative.

Sub-Criteria	Description
Health Outcomes	Consideration is given as to whether each option would have any impact on health outcomes. The adopted approach to assess health outcomes is largely qualitative. In order to capture some of the benefits specific to active travel schemes, AMAT is used to quantify health benefits from increased use of walking and cycling.
Access to Health and Wellbeing Infrastructure	Consideration is given to changes in accessibility and connectivity to health and medical centres, parks and outdoor recreational spaces. The adopted approach to assess access to health and wellbeing infrastructure is qualitative.
Visual Amenity	Consideration is given to the impact of each option on visual amenity. The adopted approach is largely qualitative in the absence of any robust and feasible tool to quantify results.

7.5.4 Economy

The assessment of Economy considers the performance of the options against the two Economy sub-criteria: Transport Economic Efficiency (TEE) and Wider Economic Impacts (WEIs). AMAT is used to establish the monetised value of benefits relating to journey ambience, congestion benefits and indirect taxation.

7.5.5 Equality and Accessibility

The assessment of Equality and Accessibility considers the performance of the options against the five Equality and Accessibility sub-criteria: Public Transport Network Coverage, Active Travel Network Coverage, Comparative Access by People Group, Comparative Access by Geographic Location and Affordability.

These aspects have been appraised qualitatively. Consideration has been given to the distributional impacts associated with each option, such as car availability and accessibility of different demographic groups in terms of accessibility to key destinations (such as employment and healthcare).

Additional consideration is given to the impacts of transport changes on particular societal groups through the high-level Statutory Impact Assessment (SIA) review for each option.

7.6 Deliverability Criteria

Building on the option development work undertaken in respect of the Table 2 options (as detailed in Chapter 6), the options are also assessed in terms of Feasibility and Affordability. The appraisal of Public Acceptability is informed by the outcomes of public and stakeholder consultation (as detailed in Chapter 7).

7.7 Statutory and Duty Impact Assessments

The impacts of the options have also been captured through high-level consideration of statutory and duty impact assessment requirements, including Equalities Impact Assessment (EqIA), Children's Rights and Wellbeing Impact Assessment (CRWIA), Health Inequalities Impact Assessment (HIIA) and Fairer Scotland Duty Assessment (FSDA). Further detail on the scope of these assessments is provided in Chapter 12.

7.8 Cost to Government

The approximate cost of each option has been assessed from a public spending perspective. In developing the indicative costs, consideration has been given to aspects including construction costs, Optimism Bias (risk and contingency) and an allowance for design, placemaking and landscaping, site supervision and project management, traffic management, and monitoring and evaluation.

7.9 Summary

This Chapter provides an overview of the approach to the Detailed STAG-based Appraisal, including a description of the STAG criteria and summary of the seven-point scale of scoring. The following Chapter sets out the appraisal of the remaining Table 2 options against the study TPOs.

8. Detailed Options Appraisal – TPOs

8.1 Introduction

This Chapter sets out the appraisal of the remaining Table 2 options against the study TPOs:

- TPO1: Increase the number of walking and wheeling trips in the study area by 20% within 5 years of project delivery (against a 2024 baseline)
- TPO2: Increase the number of cycling trips in the study area by 20% within 5 years of project delivery (against a 2024 baseline)

8.2 TPO Appraisal

AT26: Improve active travel connectivity between the A947 study area and TECA		
TPO1	+1	This option would involve upgrading the existing path surface south and west of TECA to a bound surface and providing improved wayfinding. It would be expected to provide some support for an increase in the number of walking and wheeling trips to this key destination, by improving accessibility between the study area and TECA (and also key trip attractors to the west, for example Aberdeen Airport) by these non-car modes. Overall, this option would be expected to have a **minor positive impact** on TPO1.
TPO2	+1	This option would involve upgrading the existing path surface south and west of TECA to a bound surface and providing improved wayfinding. It would be expected to provide some support for an increase in the number of cycling trips to this key destination, by improving accessibility between the study area and TECA (and also key trip attractors to the west, for example Aberdeen Airport) by this non-car mode, similar to TPO1. Overall, this option would be expected to have a **minor positive impact** on TPO2.

AT31: Improve active travel links between the Riverside Path and housing within Dyce		
TPO1	+1	This option provides the opportunity to improve active travel access in the east of the study area between large residential areas in the centre of Dyce and the Riverside Path. The measures proposed as part of this option, including a new bound surface, dropped kerbs and tactile paving, would be expected to enhance the active travel environment in this area, therefore providing some support for an increase in the number of walking and wheeling trips to and from the recreational asset of the Riverside Path. Given the geographic location and extent of the option, it is expected that the improvements would mainly support leisure trips. There could also be indirect support for onward journeys to Seaton Park and the centre of Aberdeen via NCN1, therefore the measures could also contribute to increased walking and wheeling for recreational trips outwith the study area. However, given that this option largely relates to the formalisation of an existing active travel desire line, its overall impact would be limited. Overall, this option would be expected to have a **minor positive impact** on TPO1.
TPO2	+1	This option provides the opportunity to improve active travel access in the east of the study area between large residential areas in the centre of Dyce and the Riverside Path. The measures proposed as part of this option, including a new bound surface, dropped kerbs and tactile paving, would be expected to enhance the active travel environment in this area, therefore providing some support for an increase in the number of cycling trips to and from the recreational asset of the Riverside Path. Given the geographic location and extent of the option, it is expected that the improvements would mainly support leisure trips. There could also be indirect support for onward journeys to Seaton Park and the centre of Aberdeen via NCN1, therefore the measures could also contribute to increased cycling for recreational trips outwith the study area. However, given that this option largely relates to the formalisation of an existing active travel desire line, its overall impact would be limited. Overall, this option would be expected to have a **minor positive impact** on TPO2.

AT33: Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road		
TPO1	+1	This option provides the opportunity to improve active travel connectivity between Dyce Rail Station and the A947 and the eastern section of Dyce. Introduction of a one-way system on Station Road and adjacent streets would be expected to have some support for the creation of a space within the centre of Dyce which is more attractive to those not travelling in a vehicle. This could facilitate an increase in the number of walking and wheeling trips in this part of the study area. Implementation of improved active travel infrastructure may make it easier for people walking and wheeling to access rail services in Dyce, therefore improving overall accessibility and enabling more seamless connectivity with areas outwith the study area, including Aberdeen city centre and Inverurie. Overall, this option would be expected to have a **minor positive impact** on TPO1.
TPO2	+2	This option provides the opportunity to improve active travel connectivity between Dyce Rail Station and the A947 and the eastern section of Dyce. Introduction of a one-way system on Station Road and adjacent streets, along with a contra-flow cycle lane, would be expected to support the creation of a space within the centre of Dyce which is more attractive to those not travelling in a vehicle. The provision of the contra-flow cycle lane could facilitate an increase in the number of cycling trips in this part of the study area. Implementation of improved active travel infrastructure may make it easier for people cycling to access rail services in Dyce, therefore improving overall accessibility and enabling more seamless connectivity with areas outwith the study area, including Aberdeen city centre and Inverurie. Overall, this option would be expected to have a **moderate positive impact** on TPO2.

AT35a: Implement improvements to develop a mixed-traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae		
TPO1	+1	This option provides the opportunity for improved active travel facilities on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae. This could facilitate an increase in the number of walking and wheeling trips in this part of the study area, particularly with this route acting as one of the main access points for pedestrians to Stoneywood School. Measures to promote increased walking and wheeling to school will provide support for the delivery of this objective. Overall, this option would be expected to have a **minor positive impact** on TPO1.
TPO2	+1	This option provides the opportunity for improved active travel facilities on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae. This could facilitate an increase in the number of cycling trips in this part of the study area, particularly with this route acting as one of the main access points to Stoneywood School. Measures to promote increased cycling to school will provide support for the delivery of this objective. Overall, this option would be expected to have a **minor positive impact** on TPO2.

AT41a/b: Improve active travel access to the retail park at Bucksburn Roundabout[6]		
TPO1	+1	This option provides the opportunity for improved active travel access to the retail park at the Bucksburn Roundabout (and indirectly to the local area to the west of the A947) through the creation of either a shared use facility between the A947 crossing and the retail park, or carriageway width reduction to facilitate a segregated two-way cycleway. Either facility would be expected to enhance the active travel environment in this area, with the shared use facility variant of this option potentially providing some support for an increase in the number of walking and wheeling trips to and from the retail park, particularly from the Bucksburn area. Overall, this option would be expected to have a **minor positive impact** on TPO1.
TPO2	+1	This option provides the opportunity for improved active travel access to the retail park at the Bucksburn Roundabout (and indirectly to the local area to the west of the A947) through the creation of either a shared use facility between the A947 crossing and the retail park or carriageway width reduction to facilitate a segregated two-way cycleway. Either facility would be expected to enhance the active travel environment in this area, with the segregated two-way cycleway variant of this option likely to provide support for an increase in the number of cycling trips to and from the retail park, particularly from the Bucksburn area, and potentially from elsewhere in the study area. Overall, this option would be expected to have a **minor positive impact** on TPO2, however, provision of a segregated facility could have a moderate positive impact on the number of cycling trips undertaken in this part of the study area if progressed.

AT43: Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)		
TPO1	0	This option would upgrade an existing path between the old and new A947, including widening and providing a bound surface. It additionally considers a proposed new crossing point (to be explored at the next design stage) to improve access between the northbound and southbound bus stops, as well as the widened shared use path being progressed under Option AT58. With the geographic extent of this option limiting its overall impact, it would not be expected to provide significant support for an increase in the number of walking and wheeling trips in the study area. Overall, considering the scale of impact, this option would be expected to have a **neutral impact** on TPO1.
TPO2	0	This option would upgrade an existing path between the old and new A947, including widening and providing a bound surface. It additionally considers a proposed new crossing point (to be explored at the next design stage) to improve access between the northbound and southbound bus stops, as well as the widened shared use path being progressed under Option AT58. With the geographic extent of this option limiting its overall impact, it would not be expected to provide significant support for an increase in the number of cycling trips in the study area. Overall, considering the scale of impact, this option would be expected to have a **neutral impact** on TPO2.

[6] Option AT41a assumes the existing dual carriageway layout is retained and the existing northbound footway is upgraded to a shared use facility between the A947 crossing and the retail park. Option AT41b would involve A947 carriageway width reduction to one lane to facilitate a segregated two-way cycleway.

AT48a: Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North		
TPO1	+1	This option provides the opportunity for improved active travel connectivity along the A947 corridor through the implementation of new shared use and segregated cycleway facilities, between the Bucksburn Roundabout and Riverview Drive Roundabout North. Through the promotion of an overall coherent and connected network, this option could facilitate an increase in the number of walking and wheeling trips in the study area. Overall, this option would be expected to have a **minor positive impact** on TPO1.
TPO2	+2	This option provides the opportunity for improved active travel connectivity along the A947 corridor through the implementation of new shared use and segregated cycleway facilities, between the Bucksburn Roundabout and Riverview Drive Roundabout North. Through the promotion of an overall coherent and connected network, this option could facilitate an increase in the number of cycling trips in the study area. Overall, this option would be expected to have a **moderate positive impact** on TPO2.

AT51: Implement with-flow segregated cycleway on Old Meldrum Road		
TPO1	0	This option provides the opportunity for improved active travel connectivity by implementing a with-flow segregated cycleway on Old Meldrum Road. On this basis, it is not expected that this option would have a significant impact on increasing the number of walking and wheeling trips in this part of the study area. This option would be expected to have a **neutral impact** on TPO1.
TPO2	+2	This option provides the opportunity for improved active travel connectivity by implementing a with-flow segregated cycleway on Old Meldrum Road. On this basis, this option would be expected to facilitate an increase in the number of cycling trips in this part of the study area. This option would be expected to have a **moderate positive impact** on TPO2.

AT52: Implement two-way segregated cycleway on Old Meldrum Road		
TPO1	0	This option provides the opportunity for improved active travel connectivity by implementing a two-way segregated cycleway on Old Meldrum Road. On this basis, it is not expected that this option would have a significant impact on increasing the number of walking and wheeling trips in this part of the study area. This option would be expected to have a **neutral impact** on TPO1.
TPO2	+2	This option provides the opportunity for improved active travel connectivity by implementing a two-way segregated cycleway on Old Meldrum Road. On this basis, this option would be expected to facilitate an increase in the number of cycling trips in this part of the study area. This option would be expected to have a **moderate positive impact** on TPO2.

AT58: Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport		
TPO1	+2	This option provides the opportunity to promote active travel access towards key employment areas in the A947 study area. The implementation of a shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate, including a reduced speed limit and priority pedestrian crossings on the section of Dyce Drive between Pitmedden Road and the Industrial Estate, would be expected to provide support for an increase in the number of walking and wheeling trips to a key employment area, as well as facilitating trips between Kirkhill Industrial Estate and the Formartine & Buchan Way, by providing a new connection. Overall, this option would be expected to have a **moderate positive impact** on TPO1.
TPO2	+2	This option provides the opportunity to promote active travel access towards key employment areas in the A947 study area. The implementation of a shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate, including a reduced speed limit and priority pedestrian crossings on the section of Dyce Drive between Pitmedden Road and the Industrial Estate, would be expected to provide support for an increase in the number of cycling trips to a key employment area, as well as facilitating trips between Kirkhill Industrial Estate and the Formartine & Buchan Way, by providing a new connection. Overall, this option would be expected to have a **moderate positive impact** on TPO2.

AT61a: Implement package of active travel measures on Victoria Street[7]		
TPO1	+2	This option provides opportunity to improve accessibility and active travel opportunities in the 'heart' of Dyce. It is considered that the implementation of active travel measures along Victoria Street, including a reduced speed limit, removal of on-street parking and mixed traffic street measures could facilitate an increase in the number of walking and wheeling trips in the centre of the study area. The extent of the measures proposed in this option may therefore contribute to a more significant impact on walking and wheeling than options such as AT33, which is focussed on a smaller area. On this basis, this option would be expected to have a **moderate positive impact** on TPO1.
TPO2	+3	This option provides opportunity to improve accessibility and active travel opportunities in the 'heart' of Dyce. It is considered that the implementation of active travel measures along Victoria Street, including a reduced speed limit, removal of on-street parking, mixed traffic street measures and sections of segregated cycleway could facilitate an increase in the number of cycling trips in the centre of the study area. The extent of the measures proposed in this option may therefore contribute to a more significant impact on levels of cycling than options such as AT33, which is focussed on a smaller area. By providing sections of segregation, a high level of service will be available to cyclists in the Victoria Street area. On this basis, this option would be expected to have a **major positive impact** on TPO2.

[7] This option provides the opportunity to improve accessibility and active travel opportunities in the 'heart' of Dyce and has been considered in three sections: 1) Victoria Street/Riverview Drive South Roundabout to Farburn Terrace; 2) Farburn Terrace to Pitmedden Road; and 3) Pitmedden Road to Victoria Street/Riverview Drive North Roundabout. In Section 1, there is adequate space on the eastern side to develop a segregated cycleway connection by reallocating the existing advisory cycle lanes and utilising the existing verge space. In Section 2, there is limited scope to widen the existing footways or reduce the carriageway width due to bordering property boundaries. A reduction of the speed limit to 20mph and introduction of various measures would allow this section to be formalised as a mixed traffic street. Section 3 has three sub-improvement options, with varying volumes of works required. Option 3a involves the reduction of the road carriageway width to 6m, removal of on-street parking and speed limit reduction to 20mph. Option 3b – reduction of speed limit to 20mph and removal of on street parking would create opportunity to widen and reclassify existing footways on Eastern side to shared use desirable minimum width, with local sections of absolute minimum shared use width due to corridor constraints. Option 3c would continue the measures introduced as part of Option 3b with a reduced speed limit to formalise Section 3 as a mixed traffic street.

AT65: Implement streetscape improvements and widened pavements along Mugiemoss Road		
TPO1	+1	The implementation of streetscape improvements (including quiet route measures) and widened pavements along Mugiemoss Road would be expected to provide some support for increasing the number of walking and wheeling trips in this part of the study area. On this basis, this option would be expected to have a **minor positive impact** on TPO1.
TPO2	+1	The implementation of streetscape improvements (including quiet route measures) and widened pavements along Mugiemoss Road would be expected to provide some support for increasing the number of cycling trips in this part of the study area. On this basis, this option would be expected to have a **minor positive impact** on TPO2.

PT2: Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor		
TPO1	0	Given the focus of this option is on bus priority interventions, it is not expected to have a significant impact on increasing the number of walking and wheeling trips in the study area. On this basis, this option would be expected to have a **neutral impact** on TPO1.
TPO2	0	Given the focus of this option is on bus priority interventions, it is not expected to have a significant impact on increasing the number of cycling trips in the study area. On this basis, this option would be expected to have a **neutral impact** on TPO2.

O2: Review the layout of the Victoria Street/Skene Place Junction		
TPO1	+1	Option AT33 explores the improvement of active travel links between Dyce Rail Station and the A947 through the adoption of measures along Station Road and its side roads. Skene Place is linked to Station Road by Merrivale. Option O2 aims to simplify traffic movements to and from Victoria Street by introducing a one-way system using Station Road, Merrivale and Skene Place. Introduction of a one-way system on Station Road and adjacent streets would be expected to have some support for the creation of a space within the centre of Dyce which is more attractive to those not travelling in a vehicle. This could facilitate an increase in the number of walking and wheeling trips in this part of the study area. Overall, this option would be expected to have a **minor positive impact** on TPO1.
TPO2	+1	Option AT33 explores the improvement of active travel links between Dyce Rail Station and the A947 through the adoption of measures along Station Road and its side roads. Skene Place is linked to Station Road by Merrivale. Option O2 aims to simplify traffic movements to and from Victoria Street by introducing a one-way system using Station Road, Merrivale and Skene Place. Introduction of a one-way system on Station Road and adjacent streets, along with a contra-flow cycle lane (as part of Option AT33), would be expected to support the creation of a space within the centre of Dyce which is more attractive to those not travelling in a vehicle. The improvements associated with Option O2 and provision of the contra-flow cycle lane could facilitate an increase in the number of cycling trips in this part of the study area. Overall, this option would be expected to have a **minor positive impact** on TPO2.

O3: Review the layout of the Riverview Drive/Balloch Way Junction		
TPO1	0	This option would involve a reduction in kerb radii to 6m and a narrowing of the existing junction to reduce the speed of traffic turning into Balloch Way from Riverview Drive. It is not expected that changes to this junction arrangement would have a significant impact on increasing the number of walking and wheeling trips in this part of the study area. On this basis, this option would be expected to have a **neutral impact** on TPO1.
TPO2	0	This option would involve a reduction in kerb radii to 6m and a narrowing of the existing junction to reduce the speed of traffic turning into Balloch Way from Riverview Drive. It is not expected that changes to this junction arrangement would have a significant impact on increasing the number of cycling trips in this part of the study area. On this basis, this option would be expected to have a **neutral impact** on TPO2.

O4: Review the layout of the Riverview Drive/Todlaw Walk Junction		
TPO1	0	This option would involve a reduction in kerb radii to 6m and a narrowing of the existing junction to reduce the speed of traffic turning into Todlaw Walk from Riverview Drive. It is not expected that changes to this junction arrangement would have a significant impact on increasing the number of walking and wheeling trips in this part of the study area. On this basis, this option would be expected to have a **neutral impact** on TPO1.
TPO2	0	This option would involve a reduction in kerb radii to 6m and a narrowing of the existing junction to reduce the speed of traffic turning into Todlaw Walk from Riverview Drive. It is not expected that changes to this junction arrangement would have a significant impact on increasing the number of cycling trips in this part of the study area. On this basis, this option would be expected to have a **neutral impact** on TPO2.

O5: Review the layout of the Riverview Drive/Netherview Avenue Junction		
TPO1	0	This option would involve a reduction in kerb radii to 10m and a narrowing of the existing junction to reduce the speed of traffic turning into Netherview Avenue from Riverview Drive. It is not expected that changes to this junction arrangement would have a significant impact on increasing the number of walking and wheeling trips in this part of the study area. On this basis, this option would be expected to have a **neutral impact** on TPO1.
TPO2	0	This option would involve a reduction in kerb radii to 10m and a narrowing of the existing junction to reduce the speed of traffic turning into Netherview Avenue from Riverview Drive. It is not expected that changes to this junction arrangement would have a significant impact on increasing the number of cycling trips in this part of the study area. On this basis, this option would be expected to have a **neutral impact** on TPO2.

O7: Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer		
TPO1	0	This option would introduce measures at the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer to address the high frequency of illegal turning manoeuvres occurring from vehicles continuing straight though the 'left only' exit from Stoneywood Road to the Co-op and Marks and Spencer retail access at Beech Manor. It is not expected that changes to this junction arrangement would have a significant impact on increasing the number of walking and wheeling trips in this part of the study area. On this basis, this option would be expected to have a **neutral impact** on TPO1.
TPO2	0	This option would introduce measures at the A947/Stoneywood Road Junction at Co-Op / Marks and Spencer to address the high frequency of illegal turning manoeuvres occurring from vehicles continuing straight though the 'left only' exit from Stoneywood Road to the Co-op and Marks and Spencer retail access at Beech Manor. It is not expected that changes to this junction arrangement would have a significant impact on increasing the number of cycling trips in this part of the study area. On this basis, this option would be expected to have a **neutral impact** on TPO2.

O8: Review the layout of the A947/Stoneywood Brae Junction		
TPO1	0	This option would introduce measures at the A947/Stoneywood Brae Junction to address concerns about vehicle acceleration as the carriageway transitions from single to dual carriageway. It is not expected that changes to this junction arrangement would have a significant impact on increasing the number of walking and wheeling trips in this part of the study area. On this basis, this option would be expected to have a **neutral impact** on TPO1.
TPO2	+1	This option would introduce measures at the A947/Stoneywood Brae Junction to address concerns about vehicle acceleration as the carriageway transitions from single to dual carriageway. With this creating a safety risk for on-road cycle users, this option could provide some support for an increase in the number of cycling trips in this part of the study area that may currently be precluded due to safety concerns associated with the existing junction arrangement. On this basis, this option would be expected to have a **minor positive impact** on TPO2.

O10: Review the layout of the A947/McDonalds access road junction		
TPO1	+1	This option would involve narrowing or repositioning of the A947/McDonalds access road junction to further protect pedestrians using an at-grade crossing north of the access road. This option could provide some support for an increase in the number of walking and wheeling trips in this part of the study area, as a result. On this basis, this option would be expected to have a **minor positive impact** on TPO1.
TPO2	0	This option would involve narrowing or repositioning of the A947/McDonalds access road junction to further protect pedestrians using an at-grade crossing north of the access road. With the nature of these improvements, it is not expected that changes to this junction arrangement would have a significant impact on increasing the number of cycling trips in this part of the study area. On this basis, this option would be expected to have a **neutral impact** on TPO2.

O16: Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce		
TPO1	+3	While further assessment of the project area is required along with engagement with the local community to ensure implemented works best meet their needs within a 20-minute neighbourhood environment, it would be expected that this option would improve the active travel environment in Dyce, therefore providing significant support for an increase in the number of walking and wheeling trips in the study area. This option would be expected to have a **major positive impact** on TPO1.
TPO2	+3	While further assessment of the project area is required along with engagement with the local community to ensure implemented works best meet their needs within a 20-minute neighbourhood environment, it would be expected that this option would improve the active travel environment in Dyce, therefore providing significant support for an increase in the number of cycling trips in the study area. This option would be expected to have a **major positive impact** on TPO2.

O25: Implement access only restrictions for general traffic on Victoria Street		
TPO1	+3	The reprioritisation of the A947 along Riverview Drive supports consideration of the implementation of access only restrictions for general traffic on Victoria Street. While further assessment is required to better understand the impacts this option would have on residents, local businesses, and key transport service providers, particularly where access only restrictions place a constraint on accessibility for those who are not able to travel by active and sustainable modes of transport, this option would create a space within the centre of Dyce which is more attractive to those not travelling in a vehicle. It would be expected that this option would improve the active travel environment in Dyce, therefore providing significant support for an increase in the number of walking and wheeling trips in the centre of the study area. This option would be expected to have a **major positive impact** on TPO1.
TPO2	+3	The reprioritisation of the A947 along Riverview Drive supports consideration of the implementation of access only restrictions for general traffic on Victoria Street. While further assessment is required to better understand the impacts this option would have on residents, local businesses, and key transport service providers, particularly where access only restrictions place a constraint on accessibility for those who are not able to travel by active and sustainable modes of transport, this option would create a space within the centre of Dyce which is more attractive to those not travelling in a vehicle. It would be expected that this option would improve the active travel environment in Dyce, therefore providing significant support for an increase in the number of cycling trips in the centre of the study area. This option would be expected to have a **major positive impact** on TPO2.

O26: Implement one-way restrictions for general traffic on Victoria Street		
TPO1	+2	The reprioritisation of the A947 along Riverview Drive supports consideration of the implementation of one-way restrictions for general traffic on Victoria Street. While further assessment is required to better understand the impacts this option would have on residents, local businesses, and key transport service providers, this option would create a space within the centre of Dyce which is more attractive to those not travelling in a vehicle. It would be expected that this option would improve the active travel environment in Dyce, therefore providing support for an increase in the number of walking and wheeling trips in the centre of the study area, although the level of impact would be lower than Option O25 which would introduce access only restrictions on Victoria Street. This option would be expected to have a **moderate positive impact** on TPO1.
TPO2	+2	The reprioritisation of the A947 along Riverview Drive supports consideration of the implementation of one-way restrictions for general traffic on Victoria Street. While further assessment is required to better understand the impacts this option would have on residents, local businesses, and key transport service providers, this option would create a space within the centre of Dyce which is more attractive to those not travelling in a vehicle. It would be expected that this option would improve the active travel environment in Dyce, therefore providing support for an increase in the number of cycling trips in the centre of the study area, although the level of impact would be lower than Option O25 which would introduce access only restrictions on Victoria Street. This option would be expected to have a **moderate positive impact** on TPO2.

8.3 Summary

This Chapter has set out the appraisal of the remaining Table 2 options against the study TPOs. The following Chapter presents the outcomes from the STAG-based detailed options appraisal, considering, in turn, each of STAG criteria of Environment; Climate Change; Health, Safety and Wellbeing; Economy; and Equality and Accessibility.

9. Detailed Options Appraisal – STAG Criteria

9.1 Introduction

The Sections below present the outcomes from the STAG detailed options appraisal and focus in turn on each of STAG criteria of Environment; Climate Change; Health, Safety and Wellbeing; Economy; and Equality and Accessibility.

9.2 Environment

9.2.1 AT26 – Improve active travel connectivity between the A947 study area and TECA

Biodiversity and Habitats

- This option would involve upgrading existing paths to a bound surface to the south and west of TECA alongside small-scale wayfinding measures. Assuming that additional land-take would not be required for this option it is expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- The option is not anticipated to result in any perceptible change in land use and the changes will support the existing land use. The proposed measures, including the upgrading of existing paths to the south and west of TECA alongside small-scale wayfinding measures, are not anticipated to change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- Whilst this option is located within an area of river and surface flooding and involves upgrading of the existing network of paths to the south and west of TECA to a bound surface, it does not require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality, drainage or flooding during construction or operation of this option. This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, although the overall impact on air quality is expected to be negligible. Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option does not require land-take the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there is unlikely to be loss of any value landscape features associated with this option. It is considered that the option is likely to result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of measures proposed as part of the option have the potential to impact upon nearby noise sensitive receptors (NSRs). It is considered that these impacts whilst adverse would be temporary. Once completed and operational, this option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, although the overall impact on noise and vibration is expected to be negligible. Overall, given the geographic extent of this option and the upgrading of paths that already exist, the overall impact is expected to be **neutral**. (0)

9.2.2 AT31 – Improve active travel links between the Riverside Path and housing within Dyce

Biodiversity and Habitats

- The formalisation of the worn section of verge is not anticipated to require additional land-take. If lighting is considered as part of the detailed design then it should be directed away from any neighbouring trees so as not to affect neighbouring habitats.. As this option involves formalisation of an existing worn section of verge, with no removal of existing trees or hedges, it is expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option involves formalisation of an existing worn section of verge and is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- This option is not anticipated to result in any perceptible change in land use. The proposed measures, including new bound surface, dropped kerbs and tactile paving, would occupy an existing worn verge and pavement space and are not anticipated to change the use of land from its existing baseline use. The Riverside Path is a designated Core Path, and the option would support the existing use of this route. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- While the option is located within an area of high likelihood of flooding associated with the River Don, this option does not require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality or flooding during construction or operation of this option. The unknown ground and drainage conditions between the verge and trail towards the Riverside Path introduce risk to this option but overall the option is expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, although the overall impact on air quality is expected to be negligible. Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option does not require land-take the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there would be no loss of value landscape features associated with this option. The proposed measures, including new bound surface, dropped kerbs and tactile paving, would occupy an existing worn verge and pavement space and would

not change the overall impression of landscape character. The overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of measures proposed as part of the option have the potential to impact upon nearby noise sensitive receptors (NSRs). It is considered that these impacts whilst adverse would be temporary. Once completed and operational, this option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use. However, as this option is limited to the formalisation of an existing pedestrian desire line the scale of change and overall impact on noise and vibration is expected to be negligible. Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

9.2.3 AT33 – Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road

Biodiversity and Habitats

- The introduction of measures including a one-way system, removal of on-road parking and potential new cycle lanes along Station Road would utilise the existing road carriageway and are not anticipated to require additional land-take. This option is therefore expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- The option is not anticipated to result in any perceptible change in land use. The proposed measures, including a one-way system, removal of on-road parking and potential new cycle lanes along Station Road, are not anticipated to change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- Whilst this option involves improving active travel links between Dyce Rail Station and the A947, it does not require changes to areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality, drainage or flooding during construction or operation of this option. This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, although the overall impact on air quality is expected to be negligible.

- Benefits arising from improved local air quality as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £10 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**

- Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option does not require land-take the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there is unlikely to be loss of any value landscape features associated with this option. It is considered that the option is likely to result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of measures proposed as part of the option have the potential to impact upon nearby noise sensitive receptors (NSRs). It is considered that these impacts whilst adverse would be temporary. Once completed and operational, this option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use. However, as this option is limited to the formalisation of an existing pedestrian desire line the scale of change and overall impact on noise and vibration is expected to be negligible.

- Benefits arising from reduced noise as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £10 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H**. Further assessment would be required to estimate the change in noise associated with this option by using traffic data and traffic modelling to estimate traffic noise levels as a result of changes in flow.

- Overall, with the information available and given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

9.2.4 AT35a – Implement improvements to develop a mixed-traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae

Biodiversity and Habitats

- The introduction of this option is not anticipated to require additional land-take and would utilise the existing carriageway space. This option is therefore expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- The option is not anticipated to result in any perceptible change in land use. The proposed measures would occupy existing road space and would not be anticipated to change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- This option does not require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality or flooding during construction or operation of this option. A drainage assessment will be required to ensure the addition of new drainage gullies do not have a negative impact on the existing system. This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, although the overall impact on air quality is expected to

be negligible. Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option does not require land-take the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there is unlikely to be loss of any value landscape features associated with this option. It is considered that the option is likely to result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of measures proposed as part of the option have the potential to impact upon nearby noise sensitive receptors (NSRs). It is considered that these impacts whilst adverse would be both minor and temporary. Once completed and operational, this option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use. The implementation of mixed-traffic street measures may have a minor positive impact on noise and vibration in locations where these measures are implemented. Further assessment would be required to estimate the change in noise associated with this option by using traffic data and traffic modelling to estimate traffic noise levels as a result of changes in flow.

  Overall, given the geographic extent of this option, the overall impact is expected to be **minor positive**. (+1)

9.2.5 AT41a/b – Improve active travel access to the retail park at the Bucksburn Roundabout

Biodiversity and Habitats

- Shared use facility: Retainment of the A947 dual traffic lanes and upgrade of the existing footway west of the A947 to shared use would be expected to require some land-take and the removal of vegetation. There is the potential for impacts to roosting bats from noise, vibration and lighting during construction, however it is recommended that pre-construction surveys are undertaken by a suitably qualified ecologist. Detailed design should ensure items such as lighting are directed away from existing buildings and trees. Any trees requiring any lopping or removal would require to be surveyed for suitability for bats and breeding birds prior to any works commencing. At this stage, this option is expected to have a **minor negative impact** on biodiversity and habitats. (-1)

- Segregated two-way cycleway: The reduction of the northbound carriageway to one-lane and provision of a segregated two-way cycleway would use the existing road carriageway and therefore no additional land-take would be anticipated. Therefore, this option would be expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- Shared use facility: There are no geological designations within the study area. Whilst this option may involve some land-take to accommodate a shared use path, no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

- Segregated two-way cycleway: There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- Shared use facility: Retainment of the A947 dual traffic lanes and upgrade of the existing footway west of the A947 to shared use would be expected to require some land-take and the removal of vegetation. The extent of this would be limited to a small expansion into road verges and is not anticipated to result in any perceptible change in land use. Overall, this option is expected to have a **neutral impact** on land use. (0)

- Segregated two-way cycleway: The reduction of the northbound carriageway to one-lane and provision of a segregated two-way cycleway would use the existing road carriageway and therefore no additional land-take would be anticipated and there would be no change in baseline use. Overall, this option is expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- Shared use facility: This option does not require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality or flooding during construction or operation of this option. A drainage assessment will be required to ensure the increased runoff and additional gullies do not exceed the network's capacity. This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

- Segregated two-way cycleway: This option does not require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality or flooding during construction or operation of this option. A drainage assessment will be required to ensure the increased runoff and additional gullies do not exceed the network's capacity. This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- Shared use facility: This option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, although the overall impact on air quality is expected to be neutral. Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

- Segregated two-way cycleway: This option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, although the overall impact on air quality is expected to be **neutral**. The reduction of the northbound carriageway to one lane could result in slower-moving vehicular traffic with an associated negative impact on air quality, however, the impact of this would depend on the level of modal shift achieved through improvements to active travel provision. At this stage, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

Historic Environment

- Shared use facility: There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option does not require land-take beyond small expansion into existing road verges, the impact on Historic Environment is considered to be **neutral**. (0)

- Segregated two-way cycleway: There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option does not require land-take, the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- Shared use facility: There are no landscape designations within the study area and there is unlikely to be loss of any value landscape features associated with this option. It is considered that the option is likely to result in no perceptible change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

- Segregated two-way cycleway: There are no landscape designations within the study area and there is unlikely to be loss of any value landscape features associated with this option. It is considered that the

option is likely to result in no perceptible change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Shared use facility: Noise levels generated during the construction phase of measures proposed as part of this option, including the provision of a shared use path and the potential requirement to relocate lighting columns, signal posts and to remove vegetation have the potential to impact upon nearby noise sensitive receptors (NSRs) including a small number of residential and business properties adjacent to the A947 between Bucksburn Roundabout and the toucan crossing to the north of the Old Meldrum Road Junction. It is considered that these impacts whilst adverse would be temporary. Once completed and in operation, the option could potentially alter noise emissions due to changes in traffic experienced at these NSRs as a result of increased walking, wheeling and cycling as a proportion of modes of transport and a move away from private car use, which may have a minor positive impact on noise and vibration. Further assessment would be required to estimate the change in noise associated with this option by using traffic data and traffic modelling to estimate traffic noise levels as a result of changes in flow. Overall, there is anticipated to be a **minor positive impact** on noise and vibration at this stage. (+1)

- Segregated two-way cycleway: Noise levels generated during the construction phase of measures proposed as part of this option, including the provision of a segregated cycleway have the potential to impact upon nearby noise sensitive receptors (NSRs) including a small number of residential and business properties adjacent to the A947 between Bucksburn Roundabout and the toucan crossing to the north of the Old Meldrum Road Junction. It is considered that these impacts whilst adverse would be temporary.

  Once completed and in operation, the option could potentially alter noise emissions due to changes in traffic experienced at these NSRs as a result of increased walking, wheeling and cycling as a proportion of modes of transport and a move away from private car use, which may have a minor positive impact on noise and vibration. However, reduction of the northbound carriageway to one lane could result in changes to road traffic flow and speeds, which could alter the character of traffic noise in the vicinity of the NSRs.

  Overall, there is anticipated to be a **neutral impact** on noise and vibration. (0)

9.2.6 AT43 – Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)

Biodiversity and Habitats

- The upgrade of the existing path between the old and new A947 would involve widening of the path using verge space alongside the existing unbound path. It is anticipated that expansion into verge space would be required for approximately 45m. Whilst this would involve the removal of vegetation, it is unlikely that there would be any removal of trees or hedges required to implement this option. If lighting is considered as part of the detailed design, then it should be directed away from any neighbouring trees so as not to affect neighbouring habitats. Pre-construction surveys are nonetheless recommended to be undertaken by a suitably qualified ecologist, however, at this stage the overall impact on biodiversity and habitats is expected to be **neutral**. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option involves improvements to an existing path and is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- This option is not anticipated to result in any perceptible change in land use. The proposed measures, including widening of the path and upgrading the surface to a bound surface would occupy the space of the existing path and adjacent verge and are not anticipated to change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- Whilst the option is located within an area of high likelihood of flooding associated with the River Don, this option involves upgrading of the existing footpath between the old and new A947 to a bound surface and does not require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality, drainage or flooding during construction or operation of this option. This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, although the overall impact on air quality is expected to be neutral. Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option does not require land-take beyond small expansion into existing road verges, the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there would be no loss of value landscape features associated with this option. The proposed measures, including new bound surface, would occupy an existing road verge and would not change the overall impression of landscape character. The overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of measures proposed as part of the option have the potential to impact upon nearby noise sensitive receptors (NSRs). It is considered that these impacts whilst adverse would be temporary. Once completed and operational, this option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use. However, as this option is limited to upgrading of an existing small section of active travel provision, the scale of change and overall impact on noise and vibration is expected to be negligible. Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

9.2.7 AT48a – Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North

Biodiversity and Habitats

- The implementation of active travel improvements, including a combination of shared use paths and two-way segregated cycleway, to support the promotion of an overall coherent and connected active travel network on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North, would use the existing road carriageway (with some expansion into the existing verge). Whilst some vegetation clearance would be required where planting is close to the back of the existing footway, it is unlikely that there would be any removal of trees or hedges required to implement this option. Pre-construction surveys along the route are recommended to be undertaken by a suitably qualified ecologist. The overall impact on biodiversity and habitats at this stage is expected to be **neutral**. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- The option is not anticipated to result in any perceptible change in land use. The proposed active travel improvements would occupy existing road space and are not anticipated to change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- Changes to areas of hardstanding can result in changes to surface water run off direction, and risk of pollution incidents during both construction, through spillage of construction materials, and operation, through vehicle fuel or oil spillages for example. As such, there is a risk of run off and the potential of pollution affecting water quality of the River Don tributaries: Far Burn which is centrally located and runs west-east crossing Victoria Street south of Farburn Terrace, and Green Burn which is located in the vicinity of the A947 at Stoneywood. A scheme of protection measures would require to be implemented to ensure no pollution of watercourses during construction.

- To minimise the potential for adverse effects on water quality, all construction works, including enabling works, would be required to be undertaken in accordance with relevant and up to date good practice guidance, including SEPA Pollution Prevention Guidelines/Guidance for Pollution Prevention (PPGs/GPPs). There are not anticipated to be any changes to current potential risks to water quality or flooding during operation of this option. Assuming adequate mitigation measures are in place during the construction period (including a drainage assessment to ensure the increased runoff and additional gullies do not exceed the network's capacity), this option is expected to have an overall **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, although the overall impact on air quality is expected to be neutral.

- Benefits arising from improved local air quality as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £740 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**

- Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option does not require additional land-take the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there is unlikely to be loss of any valuable landscape features associated with this option. It is considered that the option is likely to result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of measures proposed as part of the option have the potential to impact upon nearby noise sensitive receptors (NSRs). It is considered that these impacts whilst adverse would be temporary. Once constructed and operational, this option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use. This may have a minor positive impact on noise and vibration along the A947 between the Bucksburn Roundabout and the Riverview Drive Roundabout North.

- Benefits arising from reduced noise as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the

toolkit indicate that there would be benefits of approximately £1,160 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H**. Further assessment would be required to estimate the change in noise associated with this option by using traffic data and traffic modelling to estimate traffic noise levels as a result of changes in flow.

- Overall, with the information available, the impact is expected to be **minor positive**. (+1)

9.2.8 AT51 – Implement with-flow segregated cycleway on Old Meldrum Road

Biodiversity and Habitats

- The introduction of with-flow segregated cycleway on Old Meldrum Road would require some localised footway narrowing to an absolute minimum width to facilitate retention of on-street parking at the northern end of Old Meldrum Road, and some removal of on-street parking at the southern end, but is not anticipated to require additional land-take and would utilise the existing road carriageway. This option is therefore expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- The option is not anticipated to result in any perceptible change in land use. The proposed introduction of with-flow segregated cycleway would occupy existing road space and is not anticipated to change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- This option does not require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality or flooding during construction or operation of this option. The new kerb line on the exterior of the cycleway will disrupt the existing drainage flow paths along Old Meldrum Road. It is anticipated that gaps would be left within the kerbed buffer to enable existing surface run-off to continue as is, and, with no intended increase in impermeable area, the drainage impact is considered to have a low risk impact. This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, although the overall impact on air quality is expected to be neutral.
- Benefits arising from improved local air quality as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £70 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**
- Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option does not require land-take the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there is unlikely to be loss of any value landscape features associated with this option. It is considered that the option is likely to result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of measures proposed as part of the option have the potential to impact upon nearby noise sensitive receptors (NSRs). It is considered that these impacts whilst adverse would be temporary. Once constructed and operational, this option could increase cycling as a proportion of modes of transport and encourage a move away from private car use. This may have a minor positive impact on noise and vibration along Old Meldrum Road.

- Benefits arising from reduced noise as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £110 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.** Further assessment would be required to estimate the change in noise associated with this option by using traffic data and traffic modelling to estimate traffic noise levels as a result of changes in flow.

- Overall, with the information available, the impact is expected to be **minor positive**. (+1)

9.2.9 AT52 – Implement two-way segregated cycleway on Old Meldrum Road

Biodiversity and Habitats

- The introduction of two-way segregated cycleway on Old Meldrum Road would require some removal of on-street parking but is not anticipated to require additional land-take and would utilise the existing road carriageway. This option is therefore expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- The option is not anticipated to result in any perceptible change in land use. The proposed introduction of two-way segregated cycleway would occupy existing road space and is not anticipated to change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- This option does not require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality or flooding during construction or operation of this option. The new kerb line on the exterior of the cycleway will disrupt the existing drainage flow paths along Old Meldrum Road. It is anticipated that gaps would be left within the kerbed buffer to enable existing surface run-off to continue as is, and, with no intended increase in impermeable area, the drainage impact is considered to have a low risk impact This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, although the overall impact on air quality is expected to be neutral.

- Benefits arising from improved local air quality as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results

from the toolkit indicate that there would be benefits of approximately £70 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**

- Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option does not require land-take the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there is unlikely to be loss of any value landscape features associated with this option. It is considered that the option is likely to result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of measures proposed as part of the option have the potential to impact upon nearby noise sensitive receptors (NSRs). It is considered that these impacts whilst adverse would be temporary. Once constructed and operational, this option could increase cycling as a proportion of modes of transport and encourage a move away from private car use. This may have a minor positive impact on noise and vibration along Old Meldrum Road.

- Benefits arising from reduced noise as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £110 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.** Further assessment would be required to estimate the change in noise associated with this option by using traffic data and traffic modelling to estimate traffic noise levels as a result of changes in flow.

- Overall, with the information available, the impact is expected to be **minor positive**. (+1)

9.2.10 AT58 – Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport

Biodiversity and Habitats

- The introduction of a shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate would require land acquisition and the removal of vegetation adjacent to the carriageway along the eastern part of the link. There is the potential for impacts to roosting bats from noise, vibration and lighting during construction. Detailed design should ensure items such as lighting are directed away from existing buildings and trees. Any trees requiring lopping or removal would require to be surveyed for suitability for bats and breeding birds prior to any works commencing. Pre-construction surveys along the route are recommended to be undertaken by a suitably qualified ecologist. At this stage, this option is expected to have a **moderate negative impact** on biodiversity and habitats. (-2)

Geology and Soils

- There are no geological designations within the study area. This option would involve some land-take along the eastern part of the link to accommodate a shared use path, however no displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- Implementation of a shared use path on Dyce Drive would require some land-take and the removal of vegetation adjacent to the carriageway along the eastern part of the link. The existing pavement

adjacent to Dyce Drive is a designated Core Path, and the option would support the existing use of this route. The extent of this would be limited to a small expansion into road verges and is not anticipated to result in any perceptible change in land use. Engagement should be carried out with the relevant landowners during detailed design to ensure there is no impact on the adjacent land uses. Overall, this option is expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- Changes to areas of hardstanding can result in changes to surface water run off direction, and risk of pollution incidents during both construction, through spillage of construction materials, and operation, through vehicle fuel or oil spillages for example. As such, there is a risk of run off and the potential of pollution affecting water quality of the River Don tributary located close to the eastern part of the link. A scheme of protection measures would require to be implemented to ensure no pollution of watercourses during construction. To minimise the potential for adverse effects on water quality, all construction works, including enabling works, would be required to be undertaken in accordance with relevant and up to date good practice guidance, including SEPA Pollution Prevention Guidelines/Guidance for Pollution Prevention (PPGs/GPPs). There are not anticipated to be any changes to current potential risks to water quality, drainage or flooding during operation of this option. Assuming adequate mitigation measures are in place during the construction period, this option is expected to have an overall **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, although the overall impact on air quality is expected to be neutral.

- Benefits arising from improved local air quality as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £70 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**

- Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. Whilst this option requires land-take adjacent to the carriageway along the eastern part of the link, this is limited to {length, breadth} and the overall impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there is unlikely to be loss of any value landscape features associated with this option. It is considered that the option is likely to result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of measures proposed as part of the option have the potential to impact upon nearby noise sensitive receptors (NSRs). It is considered that these impacts whilst adverse would be temporary. Once constructed and operational, this option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use. This may have a minor positive impact on noise and vibration along Dyce Drive.

- Benefits arising from reduced noise as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £70 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.** Further assessment would be required to estimate the change

in noise associated with this option by using traffic data and traffic modelling to estimate traffic noise levels as a result of changes in flow.

- Overall, with the information available, the impact is expected to be **minor positive**. (+1)

9.2.11 AT61a – Implement package of active travel measures on Victoria Street

Biodiversity and Habitats

- The implementation of a package of active travel measures on Victoria Street would include utilising existing verge space on the eastern side of the A947 between Farburn Terrace and Riverview Drive (south) in order to introduce a segregated cycling facility. It is anticipated that expansion into verge space would be required for approximately 300m, which would result in the loss of some areas of vegetation although it is unlikely that there would be any removal of trees or hedges required to implement this option. Pre-construction surveys are nonetheless recommended to be undertaken by a suitably qualified ecologist, however, at this stage the option is expected to have a **minor negative impact** on biodiversity and habitats. (-1)

Geology and Soils

- There are no geological designations within the study area. This option would involve some expansion into the verge along the eastern section between Farburn Terrace and Riverview Drive South Roundabout to accommodate a segregated cycleway, however no displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- Implementation of a segregated cycleway on the section between Riverview Drive South Roundabout and Farburn Terrace would require removal of vegetation adjacent to the carriageway. This would result in a change in land-use, however the extent of this would be limited to a small expansion into road verges and is not anticipated to result in any perceptible change in land use. North of Farburn Terrace, this option would use the existing road carriageway and there would be no change in baseline use. Overall, this option is expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- Changes to areas of hardstanding can result in changes to surface water run off direction, and risk of pollution incidents during both construction, through spillage of construction materials, and operation, through vehicle fuel or oil spillages for example. As such, there is a risk of run off and the potential of pollution affecting water quality of the River Don tributary (Far Burn) which is centrally located and runs west-east crossing Victoria Street south of Farburn Terrace. A scheme of protection measures would require to be implemented to ensure no pollution of watercourses during construction.

- To minimise the potential for adverse effects on water quality, all construction works, including enabling works, would be required to be undertaken in accordance with relevant and up to date good practice guidance, including SEPA Pollution Prevention Guidelines/Guidance for Pollution Prevention (PPGs/GPPs). There are not anticipated to be any changes to current potential risks to water quality, or flooding during operation of this option. It is proposed that carriageway space is sacrificed to accommodate the widened footways for shared use therefore there is no anticipated increase in impermeable area. The existing gullies will require relocation in accordance with the revised kerb line, however the overall drainage impact is considered to have a low risk impact in terms of feasibility. Assuming adequate mitigation measures are in place during the construction period, this option is expected to have an overall **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, particularly as the removal of on-street parking may reduce the number of car trips in the area.

- Benefits arising from improved local air quality as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £100 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**

- However, given the geographic extent of this option, the overall impact on air quality is expected to be **neutral**. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. Whilst this option requires verge space adjacent to the carriageway along the section between Riverview Drive South Roundabout and Farburn Terrace, this is limited to {300m, breadth} and the overall impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- This option is expected to result in some change to the landscape character along Victoria Street to facilitate active travel measures. Verge space would be required for approximately 300m between Farburn Terrace and Riverview Drive (South). However, this would be negated through sympathetic design and landscaping by enhancing the sense of place, providing a better environment for active travel and removing on-street parking. There are no landscape designations within the study area and there is unlikely to be loss of any value landscape features associated with this option. The overall impact is therefore considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of this option, including the removal of vegetation adjacent to the carriageway to create a segregated cycleway between Farburn Terrace and Riverview Drive South, have the potential to impact upon noise sensitive receptors (NSRs) along Victoria Street, including residential and business properties. It is considered that these impacts whilst adverse would be temporary.

  Once completed and in operation, the option could potentially alter noise emissions due to changes in traffic levels as a result of increased walking, wheeling and cycling as a proportion of modes of transport and a move away from private car use, which may have a minor positive impact on noise and vibration. Changes to road traffic flow and a reduction in the speed limit could alter the character of traffic noise along Victoria Street.

- Benefits arising from reduced noise as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £150 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.** Further assessment would be required to estimate the change in noise associated with this option by using traffic data and traffic modelling to estimate traffic noise levels as a result of changes in flow.

- Overall, with the information available, the impact is expected to be **minor positive**. (+1)

9.2.12 AT65 – Implement streetscape improvements and widened pavements along Mugiemoss Road

Biodiversity and Habitats

- The introduction of quiet route measures - including mixed traffic street measures on the section of Mugiemoss Road between the junctions with Old Meldrum Road and Mill Drive, and the reallocation of space from the road carriageway to create a widened northern footway for shared use beyond the Mill Drive junction - is not anticipated to require additional land-take. This option is therefore expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- The option is not anticipated to result in any perceptible change in land use. The proposed measures, including the introduction of quiet route measures, mixed traffic street measures to protect active travel users, and widening of the existing north footway for shared use on the section of Mugiemoss Road beyond Mill Drive, would occupy existing road space and are not anticipated to change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- This option does not require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality or flooding during construction or operation of this option. It is proposed that carriageway space is sacrificed to accommodate the widened footways therefore there is no anticipated increase in impermeable area. The existing gullies will require relocation in accordance with the revised kerb line, however the overall drainage impact is considered to have a low risk. This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, although the overall impact on air quality is expected to be negligible. Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option does not require land-take the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there is unlikely to be loss of any value landscape features associated with this option. Whilst there would be minor benefits attributable to streetscape improvements, it is considered that the option is likely to result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of measures proposed as part of the option have the potential to impact upon nearby noise sensitive receptors (NSRs). It is considered that these impacts whilst adverse would be temporary.

  Once constructed and operational, this option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use. The implementation of quiet route measures may have a minor positive impact on noise and vibration along Mugiemoss Road. Further assessment would be required to estimate the change in noise associated with this option by using traffic data and traffic modelling to estimate traffic noise levels as a result of changes in flow. Overall, given the geographic extent of this option, the overall impact is expected to be **minor positive**. (+1)

9.2.13 PT2 – Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor

Biodiversity and Habitats

- The introduction of bus priority at all traffic signals along the A947 corridor would utilise the existing road carriageway and would not require additional land-take. This option is therefore expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- The option is not anticipated to result in any perceptible change in land use. The proposed bus priority technology at traffic signals along the A947 would occupy existing road space and is not anticipated to change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- This option does not require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality, drainage or flooding during construction or operation of this option. This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option would improve traffic flow through signalised junctions for all users. It may lead to more reliable bus services as a result of increased bus priority at junctions which may, in turn, result in modal shift from private vehicles with resulting beneficial impacts on local air quality. Changes to air quality would vary along the road network depending on traffic flows and would be dependent on the level of modal shift that can be achieved. However, given the relatively low number of signalised junctions, this is unlikely to lead to significant improvements. Further detailed assessment would be required to calculate and model local air quality emissions alongside traffic flow data. At this stage, it is considered that this option would result in a **neutral** impact. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option relates to the introduction of adaptive traffic signals and does not require land-take the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there is unlikely to be loss of any value landscape features associated with this option. As this option relates to the introduction of adaptive traffic signals within the existing road network, it is considered that it would result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Once completed and in operation this option could potentially alter noise emissions due to changes in traffic experienced at noise sensitive receptors (NSRs) along the A947 corridor, and on the adjoining local road network. This potential change would relate to changes in road traffic flow and speeds as a result of the introduction of adaptive traffic signals. This option would be expected to improve traffic flow through junctions for all users and may result in fewer sounds associated with vehicles stopping and starting such as braking, engines running whilst stationary, and acceleration. However, given the relatively low number of signalised junctions, this is unlikely to lead to significant improvements. Further

assessment would be required to estimate the change in noise along the A947 by using traffic data and traffic modelling to estimate traffic noise levels as a result of changes in flow. Overall, at this stage, the overall impact is expected to be **minor positive**. (+1)

9.2.14 O2 – Review the layout of the Victoria Street/Skene Place Junction

Biodiversity and Habitats

- Alterations to the layout of the Victoria Street/Skene Place junction to facilitate the introduction of a one-way system on Station Road and adjacent streets would utilise the existing road carriageway which would be re-designed and would not require additional land-take. This option is therefore expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- The option is not anticipated to materially change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- This option does not require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality, drainage or flooding during construction or operation of this option. This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option is unlikely to deliver notable changes in air quality. Further detailed assessment would be required to calculate and model local air quality emissions alongside traffic flow data. At this stage, it is considered that this option would result in a **neutral impact**. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option relates to alterations to the layout of the existing Victoria Street/Skene Place junction to facilitate the introduction of a one-way system on Station Road and adjacent streets (Option AT33), it does not require land-take and the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there would be no loss of value landscape features associated with this option. It is considered that this option would result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of this option have the potential to impact upon nearby noise sensitive receptors (NSRs). It is considered that these impacts whilst adverse would be temporary. Once constructed and operational, this option could potentially alter noise emissions due to alterations to the layout of the Victoria Street/Skene Place junction to facilitate the introduction of one-way traffic flow on Station Road and adjacent streets, which would be expected to result in lower levels of traffic and fewer sounds experienced at noise sensitive receptors (NSRs) associated with vehicles stopping and starting such as braking, engines running whilst stationary and acceleration.

Further assessment would be required to estimate the change in noise associated with this option by using traffic data and traffic modelling to estimate traffic noise levels as a result of changes in flow. Overall, at this stage, the overall impact is expected to be **minor positive**. (+1)

9.2.15 O3 – Review the layout of the Riverview Drive/Balloch Way Junction

Biodiversity and Habitats

- Reduction in kerb radii at the Riverview Drive/Balloch Way junction would involve re-design within the existing road carriageway and would not require additional land-take. This option is therefore expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- This option would not be anticipated to change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- This option would not be anticipated to require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality, drainage or flooding during construction or operation of this option. This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option would not be expected to deliver notable changes in air quality and it is therefore considered that it would result in a **neutral impact** against this sub-criterion. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option relates to a reduction in existing kerb radii, it does not require land-take and the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there would be no loss of value landscape features associated with this option. It is considered that this option would result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of reducing kerb radii have the potential to impact upon nearby noise sensitive receptors (NSRs) in the form of adjacent residential properties. It is considered that these impacts whilst adverse would be temporary. During operation, this option would not be expected to alter noise emissions nor result in changes in frequency of sounds experienced at NSRs. The overall impact is expected to be **neutral**. (0)

9.2.16 O4 – Review the layout of the Riverview Drive/Todlaw Walk Junction

Biodiversity and Habitats

- Reduction in kerb radii at the Riverview Drive/Todlaw Walk junction would involve re-design within the existing road carriageway and would not require additional land-take. This option is therefore expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- The option would not be anticipated to change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- This option would not be anticipated to require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality, drainage or flooding during construction or operation of this option. This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option would not be expected to deliver notable changes in air quality and it is therefore considered that it would result in a **neutral impact** against this sub-criterion. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option relates to a reduction in existing kerb radii, it does not require land-take and the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there would be no loss of value landscape features associated with this option. It is considered that this option would result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of reducing kerb radii have the potential to impact upon nearby noise sensitive receptors (NSRs) in the form of adjacent residential properties. It is considered that these impacts whilst adverse would be temporary. During operation, this option would not be expected to alter noise emissions nor result in changes in frequency of sounds experienced at NSRs. The overall impact is expected to be **neutral**. (0)

9.2.17 O5 – Review the layout of the Riverview Drive/Netherview Avenue Junction

Biodiversity and Habitats

- Reduction in kerb radii at the Riverview Drive/Netherview Avenue junction would involve re-design within the existing road carriageway and would not require additional land-take. This option is therefore expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- The option would not be anticipated to change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- This option would not be anticipated to require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality or flooding during construction or operation of this option. Carriageway space is reallocated to the footway as part of the proposal to reduce the junction kerb radii therefore there is no anticipated increase in impermeable area. The existing gullies will require relocation in relation to the new kerb line, however the overall drainage impact is considered to have a low risk. This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option would not be expected to deliver notable changes in air quality and it is therefore considered that it would result in a **neutral impact** against this sub-criterion. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option relates to a reduction in existing kerb radii, it does not require land-take and the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there would be no loss of value landscape features associated with this option. It is considered that this option would result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of reducing kerb radii have the potential to impact upon nearby noise sensitive receptors (NSRs) in the form of adjacent residential properties. It is considered that these impacts whilst adverse would be temporary. During operation, this option would not be expected to alter noise emissions nor result in changes in frequency of sounds experienced at NSRs. The overall impact is expected to be **neutral**. (0)

9.2.18 O7 – Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer

Biodiversity and Habitats

- This option would involve increasing the existing splitter island radius at the Stoneywood Road junction in conjunction with the introduction of a tapered merge to further guide vehicles north on the A947 and/or the introduction of a physical island to replace the existing hatch road markings adjacent to the right turn filter lane on the A947. There is also potential for this option to involve revision of the Stoneywood Road/A947 junction layout to accommodate desired movements, with possible signalised interchange or roundabout. These measures would involve re-design within the existing road carriageway and would not require additional land-take. This option is therefore expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- The option is not anticipated to change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- This option does not require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality, drainage or flooding during construction or operation of this option. This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option would not deliver notable changes in air quality and it is therefore considered that it would result in a **neutral impact** against this sub-criterion. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option relates to alterations to an existing junction, it does not require land-take and the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there would be no loss of value landscape features associated with this option. It is considered that this option would result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of alterations to the junction layout have the potential to impact upon nearby noise sensitive receptors (NSRs) in the form of nearby residential properties. It is considered that these impacts whilst adverse would be temporary. During operation, this option would not be expected to alter noise emissions nor result in changes in frequency of sounds experienced at NSRs. The overall impact is expected to be **neutral**. (0)

9.2.19 O8 – Review the layout of the A947/Stoneywood Brae Junction

Biodiversity and Habitats

- Alterations to meet the minimum single to dual-carriageway taper ratio at the A947/Stoneywood Brae junction would involve re-design within the existing road carriageway and would not require additional land-take. This option is therefore expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- The option is not anticipated to change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- This option does not require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality or flooding during construction or operation of this option. Footway widening into existing verge space is proposed and will increase impermeable area and volume of surface water runoff. It is assumed that the existing carriageway drainage has capacity to manage increased volume. A drainage assessment will be required to ensure that the increased runoff does not exceed the network's capacity. This option is expected to have a **neutral impact** on Water, Drainage and Flooding overall. (0)

Air Quality

- This option would not deliver changes in air quality and it is therefore considered that it would result in a **neutral impact** against this sub-criterion. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option relates to alterations to an existing junction, it does not require land-take and the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there would be no loss of value landscape features associated with this option. It is considered that this option would result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- This option would not be expected to alter noise emissions nor result in changes in frequency of sounds experienced at NSRs, neither during implementation nor during operation. The overall impact is expected to be **neutral**. (0)

9.2.20 O10 – Review layout of the A947/McDonalds access road junction

Biodiversity and Habitats

- This option would involve layout improvements at the A947/McDonalds access road junction to narrow or reposition the junction to further protect pedestrians using the at-grade crossing north of the access road. These measures would involve re-design within the existing road carriageway and would not require additional land-take. This option is therefore expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- The option is not anticipated to change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- This option does not require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality, drainage or flooding during construction or operation of this option. This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option would not deliver notable changes in air quality and it is therefore considered that it would result in a **neutral impact** against this sub-criterion. (0)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option relates to alterations to an existing junction, it does not require land-take and the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there would be no loss of value landscape features associated with this option. It is considered that this option, would result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of alterations to the junction layout have the potential to impact upon a small number of nearby noise sensitive receptors (NSRs) in the form of residential properties on the northern part of St John's Road. It is considered that any impacts whilst adverse would be temporary. During operation, this option would not be expected to alter noise emissions nor result in changes in frequency of sounds experienced at NSRs. The overall impact is expected to be **neutral**. (0)

9.2.21 O16 – Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce

Biodiversity and Habitats

- Where the introduction of measures to support the implementation of a 20-minute neighbourhood would require land-take and the removal of vegetation, there would be the potential for adverse impacts to local biodiversity from noise, vibration and lighting during construction. Detailed design should ensure items such as lighting are directed away from existing buildings and trees. Any trees requiring lopping or removal would require to be surveyed for suitability for bats and breeding birds prior to any works commencing. Pre-construction surveys are recommended to be undertaken by a suitably qualified ecologist. At this stage there is an uncertain relationship between the proposed option and biodiversity and habitats. This option has therefore been scored as having an overall **neutral impact** on biodiversity and habitats, but this is subject to review. Further assessment should be undertaken to identify any significant environmental effects once the exact location of measures to be taken forward is confirmed. (0)

Geology and Soils

- There are no geological designations within the study area. This option may involve some land-take to accommodate measures to implement a 20-minute neighbourhood, however no displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- Implementation of a package of measures to support implementation of a 20-minute neighbourhood in Dyce would be likely to require land-take and the removal of vegetation adjacent to sections of existing road carriageway in some locations. This would result in a change in land-use, however the extent of this would be expected to be limited to a small expansion into road verges and is not anticipated to result in any perceptible change in land use. It is expected that there would be no change in overall baseline use. Overall, this option is expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- Changes to areas of hardstanding can result in changes to surface water run-off direction, and risk of pollution incidents during both construction, through spillage of construction materials, and operation, through vehicle fuel or oil spillages for example. As such, there is a risk of run-off and the potential of pollution affecting water courses located within the study area - for example the River Don's tributaries which intersect with the A947 namely Goval Burn, Far Burn and Green Burn, and the River Don at Parkhill Bridge - depending on the location of measures implemented as part of this option. A scheme of protection measures may require to be implemented to ensure no pollution of watercourses during construction. To minimise the potential for adverse effects on water quality, all construction works, including enabling works, would be required to be undertaken in accordance with relevant and up to date good practice guidance, including SEPA Pollution Prevention Guidelines/Guidance for Pollution Prevention (PPGs/GPPs), where applicable. At this stage there is an uncertain relationship between the proposed option and Water, Drainage and Flooding. Assuming adequate mitigations are implemented

where necessary, this option has been scored as having an overall **neutral impact**, but this is subject to review. Further assessment should be undertaken to identify any significant environmental effects once the exact location of measures to be taken forward is confirmed. (0)

Air Quality

- This option would be expected to increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use. There may be some local air quality benefits associated with modal shift away from private car use. Further detailed assessment would be required to calculate and model local air quality emissions alongside traffic flow data. At this stage, given the geographic extent of this option, the overall impact is expected to be **minor positive**. (+1)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. Whilst this option may require land-take adjacent to the carriageway in some locations, this would be limited to a small expansion into road verges and the overall impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- This option is expected to result in some change to the landscape character within Dyce to facilitate active travel measures. It may require land-take in some locations but this would be expected to be limited to a small expansion into road verges. This would be negated through sympathetic design and landscaping by enhancing the sense of place and providing a better environment for active travel. There are no landscape designations within the study area and there is unlikely to be loss of any value landscape features associated with this option. The overall impact is therefore considered to be **neutral**. (0)

Noise and Vibration

- Noise levels generated during the construction phase of this option have the potential to impact upon noise sensitive receptors (NSRs), including residential and business properties, depending on the location of the measures implemented. It is considered that these impacts whilst adverse would be temporary.

  Once completed and in operation, the option could potentially alter noise emissions due to changes in traffic levels as a result of increased walking, wheeling and cycling as a proportion of modes of transport and a move away from private car use. Further assessment would be required to estimate the change in noise associated with this option by using traffic data and traffic modelling to estimate traffic noise levels as a result of changes in flow. Overall, at this stage, this option is expected to generate a **minor positive impact** on noise and vibration. (+1)

9.2.22 O25 – Implement access only restrictions for general traffic on Victoria Street

Biodiversity and Habitats

- The introduction of access only restrictions for general traffic would utilise the existing road carriageway which would be re-designed and would not require additional land-take. This option is therefore expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- The option is not anticipated to materially change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- This option does not require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality, drainage or flooding during construction or operation of this option. This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option may result in local air quality benefits associated with the removal of vehicular traffic from the Victoria Street area. Further detailed assessment would be required to calculate and model local air quality emissions alongside traffic flow data. At this stage, it is considered that this option would result in a **moderate positive impact**. (+2)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option relates to changes to the operation of the existing road network and does not require land-take, the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there would be no loss of value landscape features associated with this option. It is considered that this option would result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- During operation, this option could potentially alter noise emissions due to the removal of vehicular traffic from the Victoria Street area, which would be expected to result in fewer sounds experienced at noise sensitive receptors (NSRs) associated with vehicles stopping and starting such as braking, engines running whilst stationary, and acceleration. Further assessment would be required to estimate the change in noise in the Victoria Street area by using traffic data and traffic modelling to estimate traffic noise levels as a result of changes in flow. Overall, at this stage, the overall impact is expected to be **moderate positive**. (+2)

9.2.23 O26 – Implement one-way restrictions for general traffic on Victoria Street

Biodiversity and Habitats

- The introduction of one-way restrictions for general traffic on Victoria Street would utilise the existing road carriageway which would be re-designed and would not require additional land-take. This option is therefore expected to have a **neutral impact** on biodiversity and habitats. (0)

Geology and Soils

- There are no geological designations within the study area, and no land-take or displacement of soils is anticipated within agricultural areas. This option is therefore expected to have a **neutral impact** on geology and soils. (0)

Land Use

- The option is not anticipated to materially change the use of land from its existing baseline use. The option is therefore expected to have a **neutral impact** on land use. (0)

Water, Drainage and Flooding

- This option does not require changes to large areas of hardstanding nor heavy construction works. As such, there are no anticipated changes to water quality, drainage or flooding during construction or operation of this option. This option is therefore expected to have a **neutral impact** on Water, Drainage and Flooding. (0)

Air Quality

- This option may result in local air quality benefits associated with the implementation of one-way general traffic flow in the Victoria Street area and associated lower levels of general traffic. Further detailed assessment would be required to calculate and model local air quality emissions alongside traffic flow data. At this stage, it is considered that this option would result in a **minor positive impact**. (+1)

Historic Environment

- There are no listed buildings and no other designations for cultural heritage or archaeology within the vicinity of this option. With the historic environment there always remains the potential for previously unrecorded archaeological assets to be present within the study area. However, as this option relates to changes to the operation of the existing road network and does not require land-take, the impact on Historic Environment is considered to be **neutral**. (0)

Landscape

- There are no landscape designations within the study area and there would be no loss of value landscape features associated with this option. It is considered that this option would result in no change to the overall impression of landscape character and the overall impact is considered to be **neutral**. (0)

Noise and Vibration

- During operation, this option could potentially alter noise emissions due to the implementation of one-way traffic flow in the Victoria Street area, which would be expected to result in lower levels of traffic and fewer sounds experienced at noise sensitive receptors (NSRs) associated with vehicles stopping and starting such as braking, engines running whilst stationary, and acceleration. Further assessment would be required to estimate the change in noise in the Victoria Street area by using traffic data and traffic modelling to estimate traffic noise levels as a result of changes in flow. Overall, at this stage, the overall impact is expected to be **minor positive**. (+1)

9.3 Climate Change

9.3.1 AT26 – Improve active travel connectivity between the A947 study area and TECA

Greenhouse Gas Emissions

- This option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, although the overall impact on greenhouse gas emissions is expected to be negligible. Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

Vulnerability to Effects of Climate Change

- Whilst this option involves upgrading of the existing network of paths to the south and west of TECA to a bound surface, it does not require changes to large areas of hardstanding nor heavy construction works. Upgrading of existing paths south and west of TECA to bound surfacing may provide some protection to the effects of climate change and would be designed in such a way to adapt to the potential effects of climate change, and in accordance with relevant planning, design, engineering practice and codes. In particular, future flooding associated with the effects of climate change should be considered during the design development process. Given the geographic extent of this option the overall impact is expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- Upgrading of existing paths south and west of TECA to bound surfacing may provide some protection to the effects of climate change. The active travel infrastructure associated with this option would be designed in such a way to adapt to the potential effects of climate change, and designed in accordance with relevant planning, design, engineering practice and codes. A number of mitigation and adaptation measures would be considered at later design development stages to address potential risks. The overall impact is expected to be **minor positive**. (+1)

9.3.2 AT31 – Improve active travel links between the Riverside Path and housing within Dyce

Greenhouse Gas Emissions

- This option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, although the overall impact on greenhouse gas emissions is expected to be negligible. Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

Vulnerability to Effects of Climate Change

- Whilst this option involves upgrading of the existing worn section of verge to a bound surface, it does not require changes to large areas of hardstanding nor heavy construction works. Formalisation of the worn section of verge may provide some protection against vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures. In particular, the future flooding associated with the effects of climate change on the River Don should be considered during the design development process. However, given the geographic extent of this option the overall impact is expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- Whilst this option involves upgrading of the existing worn section of verge to a bound surface, it does not require changes to large areas of hardstanding nor heavy construction works. Formalisation of the worn section of verge may provide some protection against vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures. However, given the geographic extent of this option the overall impact is expected to be **neutral**. (0)

9.3.3 AT33 – Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road

Greenhouse Gas Emissions

- This option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, although the overall impact on greenhouse gas emissions is expected to be negligible.
- Benefits arising from reduced greenhouse emissions as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £50 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**
- Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

Vulnerability to Effects of Climate Change

- This option does not require changes to large areas of hardstanding and no new paved surfaces would be created. The vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures - is expected to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- This option includes a one-way system, removal of on-road parking and potential new cycle lanes along Station Road. There are no additional infrastructure measures associated with this option and the ability of this option to adapt to the effects of climate change is therefore limited. The overall impact is therefore expected to be **neutral**. (0)

9.3.4 AT35a – Implement improvements to develop a mixed-traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae

Greenhouse Gas Emissions

- By encouraging and facilitating mode shift from motorised modes of transport and implementing mixed-traffic street measures, the number of private car trips would be anticipated to reduce and so too would the negative impact on greenhouse gas emissions, although not to any significant extent. Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

Vulnerability to Effects of Climate Change

- This option does not require changes to large areas of hardstanding and no new paved surfaces would be created. There is high likelihood of flooding (10% chance of flooding) along a number of the River Don's tributaries which intersect with the A947, including Green Burn which measures in this option lie in the vicinity of. However, the vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures - is expected to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- This option includes mixed-traffic street measures - there are no additional infrastructure measures associated with this option and the ability of this option to adapt to the effects of climate change is therefore limited. The overall impact is therefore expected to be **neutral**. (0)

9.3.5 AT41a/b – Improve active travel access to the retail park at the Bucksburn Roundabout

Greenhouse Gas Emissions

- Shared use facility: By encouraging and facilitating mode shift from motorised modes of transport and implementing improved active travel links to the retail park at Bucksburn Roundabout, the number of private car trips would be anticipated to reduce and so too would the negative impact on greenhouse gas emissions, although not to any significant extent. Overall, given the geographic extent of this option, at this stage the impact is expected to be **neutral**. (0)

- Segregated two-way cycleway: By encouraging and facilitating mode shift from motorised modes of transport and implementing improved active travel links to the retail park at Bucksburn Roundabout, the number of private car trips would be anticipated to reduce and so too would the negative impact on greenhouse gas emissions, although not to any significant extent. However, the reduction of the northbound carriageway to one lane could result in slower-moving vehicular traffic with an associated negative impact on air quality, although the impact of this would depend on the level of modal shift achieved through improvements to active travel provision. Overall, given the geographic extent of this option, at this stage the impact is expected to be **neutral**. (0)

Vulnerability to Effects of Climate Change

- Shared use facility: Whilst this option may involve upgrading of a small section of road carriageway verge to a bound surface, it does not require changes to large areas of hardstanding nor heavy construction works. The vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures - is expected to be largely unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

- Segregated two-way cycleway: Whilst this option may involve upgrading of a small section of road carriageway verge to a bound surface, it does not require changes to large areas of hardstanding nor heavy construction works. The vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures - is

expected to be largely unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- Shared use facility: This option includes improvements to active travel access to the retail park at Bucksburn Roundabout, including upgrade of the existing footway to shared use on the west side of the A947. There are no additional infrastructure measures associated with this option and the ability of this option to adapt to the effects of climate change is therefore limited. The active travel infrastructure associated with this option would be designed in such a way to adapt to the potential effects of climate change, and designed in accordance with relevant planning, design, engineering practice and codes. A number of mitigation and adaptation measures would be considered at later design development stages to address potential risks. The overall impact is therefore expected to be **minor positive**. (+1)

- Segregated two-way cycleway: This option includes improvements to active travel access to the retail park at Bucksburn Roundabout, including provision of a segregated two-way cycleway on the northbound carriageway of the A947. There are no additional infrastructure measures associated with this option and the ability of this option to adapt to the effects of climate change is therefore limited. The active travel infrastructure associated with this option would be designed in such a way to adapt to the potential effects of climate change, and designed in accordance with relevant planning, design, engineering practice and codes. A number of mitigation and adaptation measures would be considered at later design development stages to address potential risks. The overall impact is therefore expected to be **minor positive**. (+1)

9.3.6 AT43 – Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)

Greenhouse Gas Emissions

- This option could increase walking, wheeling and cycling as a proportion of modes of transport and encourage a move away from private car use, although the overall impact on greenhouse gas emissions is expected to be negligible. Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

Vulnerability to Effects of Climate Change

- Whilst this option involves upgrading of an existing path (including expansion into a small section of roadside verge) to a bound surface, it does not require changes to large areas of hardstanding nor heavy construction works. Formalisation of the existing path may provide some protection against vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures. However, given the geographic extent of this option the overall impact is expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- Upgrading of an existing path to bound surfacing may provide some protection to the effects of climate change. The active travel infrastructure associated with this option would be designed in such a way to adapt to the potential effects of climate change, and designed in accordance with relevant planning, design, engineering practice and codes. A number of mitigation and adaptation measures would be considered at later design development stages to address potential risks. However, the future flooding associated with the effects of climate change on the River Don should be considered during the design development process. Overall, given the geographic extent of this option the overall impact is expected to be **minor positive**. (+1)

9.3.7 AT48a – Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North

Greenhouse Gas Emissions

- By encouraging and facilitating mode shift from motorised modes of transport to walking, wheeling and cycling, the number of private car trips would be anticipated to reduce and so too would the negative impact on greenhouse gas emissions.
- Benefits arising from reduced greenhouse emissions as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £7,080 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**
- The overall impact in terms of greenhouse gas emissions is therefore expected to be **minor positive**. (+1)

Vulnerability to Effects of Climate Change

- There is potential for the measures included within this option to be vulnerable to the effects of climate change. Existing paved surfaces/footways would be widened into the existing verge area throughout and localised road realignment would be required along Riverview Drive to enable the development of a segregated active travel route along the corridor. Paved surfaces may incur surface damage or be impacted by surface water flooding during periods of heavy rainfall. Parts of this option are located in the vicinity of the River Don tributaries Far Burn and Green Burn which have a high likelihood of flooding (10% chance of surface water flooding). Elements of this option are therefore potentially vulnerable to the effects of climate change in respect of increased flood risk. There is also an increased risk of thermal expansion and movement of paved surfaces due to increased summer temperatures, with associated deformation and cracking. Infrastructure may be inaccessible during extreme weather events. Longer-term, there is an expectation that average temperatures will increase, along with the severity and frequency of storm events. Longer vegetation growing seasons have the potential to lead to increased tree leaf coverage. An increase in magnitude and frequency of storm events and heavy rainfall could in turn result in an increase in incidence of fallen trees and other foliage on the route. The overall impact is expected to be **minor negative**. (-1)

Potential to Adapt to Effects of Climate Change

- The active travel infrastructure associated with this option would be designed in such a way to adapt to the potential effects of climate change, and designed in accordance with relevant planning, design, engineering practice and codes. A number of mitigation and adaptation measures would be considered at later design development stages to address potential risks. The overall potential to adapt to the effects of climate change is therefore expected to be **minor positive**. (+1)

9.3.8 AT51 – Implement with-flow segregated cycleway on Old Meldrum Road

Greenhouse Gas Emissions

- By encouraging and facilitating mode shift from motorised modes of transport to cycling and reducing on-street parking provision at the southern end of Old Meldrum Road, the number of private car trips would be anticipated to reduce and so too would the negative impact on greenhouse gas emissions, although this is unlikely to be to any significant extent.
- Benefits arising from reduced greenhouse emissions as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £660 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**
- The overall impact in terms of greenhouse gas emissions is therefore expected to be **neutral**. (0)

Vulnerability to Effects of Climate Change

- This option does not require changes to large areas of hardstanding and no new paved surfaces would be created. The vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures - is expected to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- This option includes reduction in on-street parking at the southern end of Old Meldrum Road and the implementation of with-flow segregated cycleway. There will be some localised footway narrowing to an absolute minimum width to facilitate retention of on-street parking at the northern end of Old Meldrum Road. There are no additional infrastructure measures associated with this option and the ability of this option to adapt to the effects of climate change is therefore limited. The overall impact is therefore expected to be **neutral**. (0)

9.3.9 AT52 – Implement two-way segregated cycleway on Old Meldrum Road

Greenhouse Gas Emissions

- By encouraging and facilitating mode shift from motorised modes of transport to cycling and reducing on-street parking provision at the southern end of Old Meldrum Road, the number of private car trips would be anticipated to reduce and so too would the negative impact on greenhouse gas emissions, although this is unlikely to be to any significant extent.

- Benefits arising from reduced greenhouse emissions as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £660 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**

- The overall impact in terms of greenhouse gas emissions is therefore expected to be **neutral**. (0)

Vulnerability to Effects of Climate Change

- This option does not require changes to large areas of hardstanding and no new paved surfaces would be created. The vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures - is expected to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- This option includes reduction in on-street parking and the implementation of two-way segregated cycleway on Old Meldrum Road. There are no additional infrastructure measures associated with this option and the ability of this option to adapt to the effects of climate change is therefore limited. The overall impact is therefore expected to be **neutral**. (0)

9.3.10 AT58 – Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport

Greenhouse Gas Emissions

- In the short-term, greenhouse gas emissions may occur due to construction activities undertaken to implement the shared use path, particularly where land acquisition is required. This may include indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles. However, in the longer-term, by encouraging and facilitating mode shift from motorised modes of transport and implementing improved active travel links between the A947 and Kirkhill Industrial Estate, the number of private car trips would be anticipated to reduce and so too would the negative impact on greenhouse gas emissions, although the extent of this would depend on the level of modal shift that is achieved.

- Benefits arising from reduced greenhouse emissions as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £2,000 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**

- At this stage, the overall impact in terms of greenhouse gas emissions is therefore expected to be **minor positive**. (+1)

Vulnerability to Effects of Climate Change

- There is potential for the measures included within this option to be vulnerable to the effects of climate change. Paved surfaces created for the shared use path may incur surface damage or be impacted by surface water flooding during periods of heavy rainfall. Parts of this option are located in the vicinity of the point of the River Don (Parkhill Bridge) which is susceptible to flood risk and areas of Dyce Drive are also susceptible to surface water flooding. Elements of this option are therefore potentially vulnerable to the effects of climate change in respect of increased flood risk. There is also an increased risk of thermal expansion and movement of paved surfaces due to increased summer temperatures, with associated deformation and cracking. Infrastructure may be inaccessible during extreme weather events. Longer-term, there is an expectation that average temperatures would increase along with the severity and frequency of storm events. Longer vegetation growing seasons have the potential to lead to increased tree leaf coverage. An increase in magnitude and frequency of storm events and heavy rainfall could in turn result in an increase in incidence of fallen trees and other foliage on the route. The future flooding associated with the effects of climate change on the River Don should also be considered during the design development process. The overall impact is expected to be **minor negative**. (-1)

Potential to Adapt to Effects of Climate Change

- The active travel infrastructure associated with this option would be designed in such a way to adapt to the potential effects of climate change, and designed in accordance with relevant planning, design, engineering practice and codes. A number of mitigation and adaptation measures would be considered at later design development stages to address potential risks. The overall potential to adapt to the effects of climate change is therefore expected to be **minor positive**. (+1)

9.3.11 AT61a – Implement package of active travel measures on Victoria Street

Greenhouse Gas Emissions

- In the short-term, greenhouse gas emissions may occur due to construction activities undertaken to implement the measures included within this option. This may include indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles. However, in the longer-term, by encouraging and facilitating mode shift from motorised modes of transport and implementing improved active travel links and reduced on-street parking along Victoria Street, the number of private car trips would be anticipated to reduce and so too would the negative impact on greenhouse gas emissions, although not to any significant extent.

- Benefits arising from reduced greenhouse emissions as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £940 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**

- The impact of this would depend on the level of modal shift achieved through improvements to active travel provision. Overall, at this stage the overall impact is expected to be **minor positive**. (+1)

Vulnerability to Effects of Climate Change

- There is potential for the measures included within this option to be vulnerable to the effects of climate change. Paved surfaces created along the section between Farburn Terrace and Riverview Drive South Roundabout to create a segregated cycleway may incur surface damage or be impacted by surface water flooding during periods of heavy rainfall. Parts of this option are located in the vicinity of the River Don tributary Far Burn, which has a high likelihood of flooding (10% chance of flooding). Elements of

this option are therefore potentially vulnerable to the effects of climate change in respect of increased flood risk. There is also an increased risk of thermal expansion and movement of paved surfaces due to increased summer temperatures, with associated deformation and cracking. Infrastructure may be inaccessible during extreme weather events. Longer-term, there is an expectation that average temperatures will increase, along with the severity and frequency of storm events. Longer vegetation growing seasons have the potential to lead to increased tree leaf coverage. An increase in magnitude and frequency of storm events and heavy rainfall could in turn result in an increase in incidence of fallen trees and other foliage on the route. The overall impact is expected to be **minor negative**. (-1)

Potential to Adapt to Effects of Climate Change

- The active travel infrastructure associated with this option would be designed in such a way to adapt to the potential effects of climate change, and designed in accordance with relevant planning, design, engineering practice and codes. A number of mitigation and adaptation measures would be considered at later design development stages to address potential risks. The overall potential to adapt to the effects of climate change is therefore expected to be **minor positive**. (+1)

9.3.12 AT65 – Implement streetscape improvements and widened pavements along Mugiemoss Road

Greenhouse Gas Emissions

- By encouraging and facilitating mode shift from motorised modes of transport and implementing quiet route measures and measures to protect active travel users and remove existing modal conflicts, the number of private car trips would be anticipated to reduce and so too would the negative impact on greenhouse gas emissions, although not to any significant extent. Overall, given the geographic extent of this option, the overall impact is expected to be **neutral**. (0)

Vulnerability to Effects of Climate Change

- This option does not require changes to large areas of hardstanding and no new paved surfaces would be created. There is high likelihood of flooding (10% chance of flooding) along a number of the River Don's tributaries which intersect with the A947, however none of these are located within the vicinity of this option. The vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures - is expected to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- This option includes quiet route measures, mixed traffic street measures to protect active travel users, and widening of the existing north footway for shared use on the section of Mugiemoss Road beyond Mill Drive. There are no additional infrastructure measures associated with this option and the ability of this option to adapt to the effects of climate change is therefore limited. The overall impact is therefore expected to be **neutral**. (0)

9.3.13 PT2 – Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor

Greenhouse Gas Emissions

- The introduction of bus priority at all traffic signals along the A947 corridor could encourage a modal shift away from private car use with a slight decrease in the amount of carbon dioxide (CO2) released compared to the Do Minimum. However, this would be dependent on the level of modal shift which can be achieved. If the option does not adequately promote more sustainable travel, then it may result in no change to emissions. Bus priority measures could reduce pressures on operating costs, which could support greater levels of investment in new, lower emission vehicles. At this stage, the overall impact is expected to be **minor positive**. (+1)

Vulnerability to Effects of Climate Change

- This option would not require changes to large areas of hardstanding and no new paved surfaces would be created. The vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures - is expected to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- This option would involve the introduction of adaptive traffic signals to improve traffic flow through junctions along the A947 corridor. The ability of this option to adapt to the effects of climate change is likely to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

9.3.14 O2 – Review the layout of the Victoria Street/Skene Place Junction

Greenhouse Gas Emissions

- Alterations to the layout of the Victoria Street/Skene Place junction to facilitate the introduction of a one-way system on Station Road and adjacent streets could make the area more attractive for active travel and a marginal reduction in levels of general traffic and associated greenhouse gas emissions may occur. Overall, however, due to the limited geographic extent of this option the overall impact is expected to be **neutral**. (0)

Vulnerability to Effects of Climate Change

- This option does not require changes to large areas of hardstanding and no new paved surfaces would be created. None of the River Don tributaries that are identified as being of high likelihood of flooding are located in the vicinity of this option. The vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures - is, therefore, expected to be unchanged from the current situation. The overall impact is expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- This option would involve alterations to the layout of the Victoria Street/Skene Place junction to facilitate the introduction of a one-way system on Station Road and adjacent streets. The ability of this option to adapt to the effects of climate change is likely to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

9.3.15 O3 – Review the layout of the Riverview Drive/Balloch Way Junction

Greenhouse Gas Emissions

- Alterations to the layout of the Riverview Drive/Balloch Way junction are not expected to impact on greenhouse gas emissions, and the overall impact is expected to be **neutral**. (0)

Vulnerability to Effects of Climate Change

- This option would not be anticipated to require changes to large areas of hardstanding and no new paved surfaces would be created. The vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures - is, therefore, expected to be unchanged from the current situation. The overall impact is expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- This option would involve alterations to the layout of the Riverview Drive/Balloch Way junction. The ability of this option to adapt to the effects of climate change is likely to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

9.3.16 O4 – Review the layout of the Riverview Drive/Todlaw Walk Junction

Greenhouse Gas Emissions

- Alterations to the layout of the Riverview Drive/Todlaw Walk junction are not expected to impact on greenhouse gas emissions, and the overall impact is expected to be **neutral**. (0)

Vulnerability to Effects of Climate Change

- This option would not be anticipated to require changes to large areas of hardstanding and no new paved surfaces would be created. The vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures - is, therefore, expected to be unchanged from the current situation. The overall impact is expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- This option would involve alterations to the layout of the Riverview Drive/Todlaw Walk junction. The ability of this option to adapt to the effects of climate change is likely to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

9.3.17 O5 – Review the layout of the Riverview Drive/Netherview Avenue Junction

Greenhouse Gas Emissions

- Alterations to the layout of the Riverview Drive/Netherview Avenue junction are not expected to impact on greenhouse gas emissions, and the overall impact is expected to be **neutral**. (0)

Vulnerability to Effects of Climate Change

- This option would not be anticipated to require changes to large areas of hardstanding and no new paved surfaces would be created. The vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures - is, therefore, expected to be unchanged from the current situation. The overall impact is expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- This option would involve alterations to the layout of the Riverview Drive/Netherview Avenue junction. The ability of this option to adapt to the effects of climate change is likely to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

9.3.18 O7 – Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer

Greenhouse Gas Emissions

- Alterations to the layout of the A947/Stoneywood Road junction at the Co-op/Marks and Spencer are not expected to impact on greenhouse gas emissions, and the overall impact is expected to be **neutral**. (0)

Vulnerability to Effects of Climate Change

- This option would not require changes to large areas of hardstanding and no new paved surfaces would be created. The vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures - is therefore expected to be unchanged from the current situation. The overall impact is expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- This option would involve alterations to the layout of the A947/Stoneywood Road junction at the Co-op/Marks and Spencer. The ability of this option to adapt to the effects of climate change is likely to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

9.3.19 O8 – Review the layout of the A947/Stoneywood Brae Junction

Greenhouse Gas Emissions

- Alterations to the layout of the A947/Stoneywood Brae junction to meet the minimum single- to dual-carriageway taper ratio are not expected to impact on greenhouse gas emissions, and the overall impact is expected to be **neutral**. (0)

Vulnerability to Effects of Climate Change

- This option would not require changes to large areas of hardstanding and no new paved surfaces would be created. The vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures - is, therefore, expected to be unchanged from the current situation. The overall impact is expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- If this option is progressed, it would involve alterations to the layout of the A947/Stoneywood Brae junction to meet the minimum single- to dual-carriageway taper ratio. The ability of this option to adapt to the effects of climate change is likely to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

9.3.20 O10 – Review layout of the A947/McDonalds access road junction

Greenhouse Gas Emissions

- Alterations to the layout of the A947/McDonalds access road junction are not expected to impact on greenhouse gas emissions, and the overall impact is expected to be **neutral**. (0)

Vulnerability to Effects of Climate Change

- This option would not require changes to large areas of hardstanding and no new paved surfaces would be created. The vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures - is, therefore, expected to be unchanged from the current situation. The overall impact is expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- This option would involve alterations to the layout of the A947/McDonalds access road junction. The ability of this option to adapt to the effects of climate change is likely to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

9.3.21 O16 – Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce

Greenhouse Gas Emissions

- In the short-term, greenhouse gas emissions may occur due to construction activities undertaken to implement the measures included within this option, particularly where land acquisition is required. This may include indirect emissions from the manufacture and transportation of materials and emissions from the fuel combusted by construction plant and vehicles. However, in the longer-term, by encouraging and facilitating mode shift from motorised modes of transport and implementing improved active travel links for short- to medium-length journeys, the number of private car trips would be anticipated to reduce and so too would the negative impact on greenhouse gas emissions, although not to any significant extent. The impact of this would depend on the level of modal shift achieved through improvements to active

travel provision. Overall, at this stage there is expected to be a **minor positive impact** on greenhouse gas emissions. (+1)

Vulnerability to Effects of Climate Change

- There is potential for the measures included within this option to be vulnerable to the effects of climate change. Paved surfaces may incur surface damage or be impacted by surface water flooding during periods of heavy rainfall. Depending on the location of the measures implemented as part of this option, there is potential for these to be located in the vicinity of the River Don tributaries Far Burn, Goval Burn and Green Burn which have a high likelihood of flooding (10% chance of flooding), in addition to the point of the River Don (Parkhill Bridge) which is susceptible to flood risk. Elements of this option are therefore potentially vulnerable to the effects of climate change in respect of increased flood risk. There is also an increased risk of thermal expansion and movement of paved surfaces due to increased summer temperatures, with associated deformation and cracking. Infrastructure may be inaccessible during extreme weather events. Longer-term, there is an expectation that average temperatures would increase along with the severity and frequency of storm events. Longer vegetation growing seasons have the potential to lead to increased tree leaf coverage. An increase in magnitude and frequency of storm events and heavy rainfall could in turn result in an increase in incidence of fallen trees and other foliage on the measures within this option. At this stage there is an uncertain relationship between the proposed option and its vulnerability to effects of climate change. Further consideration should be given to the likely level of impact once the exact scope and location of measures to be taken forward is confirmed. At this stage, there is expected to be a **minor negative impact** in terms of vulnerability to the effects of climate change. (-1)

Potential to Adapt to Effects of Climate Change

- At this stage there is an uncertain relationship between the proposed option and its potential to adapt to the effects of climate change. Further consideration should be given to the likely level of impact once the exact scope and location of measures to be taken forward is confirmed. However, it is expected that the active travel infrastructure associated with this option would be designed in such a way to adapt to the potential effects of climate change, and designed in accordance with relevant planning, design, engineering practice and codes. A number of mitigation and adaptation measures would be considered at later design development stages to address potential risks. The overall potential to adapt to the effects of climate change is therefore expected to be **minor positive**. (+1)

9.3.22 O25 – Implement access only restrictions for general traffic on Victoria Street

Greenhouse Gas Emissions

- By removing vehicular traffic from the Victoria Street area and making the area more attractive for active travel, a reduction in greenhouse gas emissions would be expected. Overall, at this stage the overall impact is expected to be **minor positive**. (+1)

Vulnerability to Effects of Climate Change

- This option does not require changes to large areas of hardstanding and no new paved surfaces would be created. There is high likelihood of flooding (10% chance of flooding) along a number of the River Don's tributaries which intersect with the A947 namely Far Burn, which is centrally located and runs west-east crossing Victoria Street. This option is therefore vulnerable to the effects of climate change in respect of increased flood risk. The vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures - is, however, expected to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- This option would involve the introduction of access only restrictions for general traffic on Victoria Street. The ability of this option to adapt to the effects of climate change is likely to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

9.3.23 O26 – Implement one-way restrictions for general traffic on Victoria Street

Greenhouse Gas Emissions

- By implementing one-way restrictions for traffic in the Victoria Street area and making the area more attractive for active travel, a reduction in levels of general traffic and associated greenhouse gas emissions would be expected. Overall, at this stage the overall impact is expected to be **minor positive**. (+1)

Vulnerability to Effects of Climate Change

- This option does not require changes to large areas of hardstanding and no new paved surfaces would be created. There is high likelihood of flooding (10% chance of flooding) along a number of the River Don's tributaries which intersect with the A947 namely Far Burn, which is centrally located and runs west-east crossing Victoria Street. This option is therefore vulnerable to the effects of climate change in respect of increased flood risk. The vulnerability to the effects of climate change - for example surface damage or surface water flooding during periods of heavy rainfall, and risk of thermal expansion and movement (with associated deformation and cracking) due to increased summer temperatures - is, however, expected to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

Potential to Adapt to Effects of Climate Change

- This option would involve the implementation of one-way restrictions for general traffic on Victoria Street. The ability of this option to adapt to the effects of climate change is likely to be unchanged from the current situation. The overall impact is therefore expected to be **neutral**. (0)

9.4 Health, Safety and Wellbeing

Around 27% of men and 35% of women in Scotland do not meet recommended guidelines for physical activity (at least 150 minutes of moderate physical activity, 75 minutes of moderate to vigorous activity, or an equivalent combination between the two per week).[8] 29% of children do not meet the guideline (at least 60 minutes of activity on average per day)[9]. Walking, wheeling and cycling can be one of the easiest ways to incorporate activity into daily routine. Each of the 'AT' options subject to appraisal in this section will support uptake of physical activity, as well as Options O16, O25 and O26, with associated positive impacts on Health.

9.4.1 AT26 – Improve active travel connectivity between the A947 study area and TECA

Accidents

- Whilst the creation of a bound surface would reduce trip hazards and risks of cyclists coming off their bikes, it is considered that due to the small-scale nature of this option, the overall impact on the Accidents sub-criterion would be **neutral**. (0)

Security

- The implementation of this option is expected to make walking, wheeling and cycling more appealing to individuals and increase modal share of these modes. Increasing the number of people out and about walking, wheeling and cycling can have a positive impact on personal security due to increased natural surveillance. The overall impact on Security is expected to be **minor positive**. (+1)

Health

- This option would bring minor physical and mental health benefits to its users, particularly those who shift from car travel to active travel. There are several physical and mental health benefits associated with walking, wheeling and cycling. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical

[8] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

[9] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

health. This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City - North: Locality Plan 2021-26. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles, albeit the geographic extent of this option limits the potential for this. The overall impact is expected to be **minor positive**. (+1)

Access to Health and Wellbeing Infrastructure

- It is anticipated that this option could contribute to improved access to health and wellbeing facilities for those walking, wheeling or cycling, such as to GP surgeries and health centres, for example Bucksburn Medical Centre and Gilbert Road Medical Group, however the option on its own would not provide improved access directly to these facilities. Improved access to green spaces (for example Stoneyton Park and the Former Rowett Institute Trail (TECA Trail)) could also have a minor positive impact on health and wellbeing. The overall impact on Access to Health and Wellbeing Infrastructure is expected to be **minor positive**. (+1)

Visual Amenity

- It is considered that improved active travel connectivity between the A947 and TECA would have a **neutral impact** on the Visual Amenity sub-criterion. Proposed works include the implementation of wayfinding signage and upgrading existing paths west and south of TECA to create a bound surface, which would not be anticipated to result in any significant changes in terms of visual amenity. (0)

9.4.2 AT31 – Improve active travel links between the Riverside Path and housing within Dyce

Accidents

- Whilst the creation of a new bound surface and provision of dropped kerbs and tactile paving would reduce trip hazards and risks of cyclists coming off their bikes, it is considered that due to the small-scale nature of this option, the overall impact on the Accidents sub-criterion would be **neutral**. (0)

Security

- The implementation of this option is expected to make walking, wheeling and cycling more appealing to individuals and increase modal share of these modes. Increasing the number of people out and about walking, wheeling and cycling can have a positive impact on personal security due to increased natural surveillance. The overall impact on Security is expected to be **minor positive**. (+1)

Health

- This option would bring minor physical and mental health benefits to its users, particularly those who shift from car travel to active travel. There are several physical and mental health benefits associated with walking, wheeling and cycling. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City - North: Locality Plan 2021-26. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles, albeit the geographic extent of this option limits the potential for this. The overall impact is expected to be **minor positive**. (+1)

Access to Health and Wellbeing Infrastructure

- It is anticipated that this option could contribute to improved access to health and wellbeing facilities for those walking, wheeling or cycling via the Riverside Path, such as to GP surgeries and health centres in the local area, however the option on its own would not provide improved access directly to these facilities. Improved access to blue and green spaces around the River Don, and via the Riverside Footpath in the vicinity of Central Park and the Dyce 3G Pitches, for example, could also have a minor

positive impact on health and wellbeing. This option could indirectly support access to onward connections to Seaton Park and Aberdeen City Centre via NCN1. The overall impact on Access to Health and Wellbeing Infrastructure is expected to be **minor positive**. (+1)

Visual Amenity

- Potential visual effects would be limited to active travel users and the small number of residential receptors that overlook the section of verge on Riverview Drive. Construction activities would temporarily diminish the existing levels of visual amenity, although these are expected to be relatively small-scale and for a short period of time. Once operational the option is anticipated to result in slight changes to views attributable to new bound surface, dropped kerbs and tactile paving, but the overall composition and focus of views would be unaltered. Sensitive design and choice of materials would ensure this option is developed in keeping with the natural environment. Overall, the impact is expected to be **neutral**. (0)

9.4.3 AT33 – Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road

Accidents

- It is considered that improved active travel links between Dyce Rail Station and the A947/eastern section of Dyce would have a **minor positive impact** on the Accidents sub-criterion. Proposed works include the implementation of a one-way system along Station Road and adjacent streets, removal of on-road parking and potential for a new contra-flow cycle lane on Station Road. These measures would reduce the risk of accidents and collisions between active travel users and between active travel users and general traffic. This would be expected to improve safety conditions and perceptions, particularly for less experienced cyclists and vulnerable and underrepresented groups including children, women and disabled people.
- Benefits arising from reduced accidents as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £120 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**
- The overall impact on Accidents is expected to be **minor positive**. (+1)

Security

- The implementation of this option is expected to make walking, wheeling and cycling between Dyce Rail Station and the A947/eastern section of Dyce more appealing to individuals and increase modal share of these modes. Increasing the number of people out and about walking, wheeling and cycling can have a positive impact on personal security due to increased natural surveillance. The overall impact on Security is expected to be **minor positive**. (+1)

Health

- This option would bring minor physical and mental health benefits to its users, particularly those who shift from car travel to active travel. There are several physical and mental health benefits associated with walking, wheeling and cycling. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City - North: Locality Plan 2021-26. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles, albeit the geographic extent of this option limits the potential for this.
- The health benefits of increased rates of active travel as a result of the option have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). AMAT provides

assessments of the health and economic impacts of walking and cycling on premature mortality and on rates of absenteeism[10]. Outputs from the tool show that the measures implemented as part of this option could reduce premature deaths equating to benefits of up to £8,720 over a 20-year appraisal period. Additionally, AMAT indicates that there would be 1 less day of short-term sick leave per year, which equates to benefits of up to £1,500 over the same appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**

- The overall impact is expected to be **minor positive**. (+1)

Access to Health and Wellbeing Infrastructure

- It is anticipated that this option could contribute to improved access to health and wellbeing facilities for those walking, wheeling or cycling between the east of Dyce and Dyce Rail Station. The option on its own would not provide improved access directly to these health and wellbeing facilities but could facilitate access to health and wellbeing infrastructure outwith the study area through improved links to Dyce Rail Station. This option would not provide direct access to blue or green spaces but may indirectly facilitate access to green spaces in the wider area (for example Central Park/Dyce 3G Pitches). The overall impact on Access to Health and Wellbeing Infrastructure is expected to be **minor positive**. (+1)

Visual Amenity

- Potential visual effects would be limited to active travel users and the residential and business receptors that overlook Station Road. Construction activities would temporarily diminish the existing levels of visual amenity, although these are expected to be small-scale and for a short period of time. Once operational the option is anticipated to result in slight changes to views attributable to new cycle lane markings, one-way signage and the removal of on-road parking, but the overall composition and focus of views would be unaltered. As a result, the impact is expected to be neutral. By encouraging and facilitating mode shift from motorised modes of transport and implementing one-way flow of traffic, the number of private car trips would be anticipated to reduce and so too would the negative impact on visual amenity, although not to any significant extent. The overall impact is expected to be **neutral**. (0)

9.4.4 AT35a – Implement improvements to develop a mixed-traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae

Accidents

It is considered that improved active travel links on the local road network to the west of the A947 would have a **minor positive impact** on the Accidents sub-criterion. Proposed works include the implementation of mixed-traffic street measures on Bankhead Road, Greenburn Road and Millhill Brae, which allows for safe, on-road cycling and which would reduce the risk of accidents and collisions between active travel users and between active travel users and general traffic. This would be expected to improve safety conditions and perceptions, particularly for less experienced cyclists and vulnerable and underrepresented groups including children, women and disabled people. Given the geographic extent of this option, the overall impact is expected to be limited, however localised benefits are possible particularly in terms of a reduction in the perceived danger of road accidents and casualties as well as reduced personal road safety concerns as a result of the implementation of the measures, including on Greenburn Road, which acts as one of the main access points for pedestrians to Stoneywood School. (+1)

Security

- The implementation of this option is expected to make walking, wheeling and cycling more appealing to individuals and increase modal share of these modes. Increasing the number of people out and about walking, wheeling and cycling can have a positive impact on personal security due to increased natural surveillance. The overall impact on Security is expected to be **minor positive**. (+1)

[10] AMAT applies a number of assumptions based on the estimated number of walk and cycle trips as a result of the option. Further details are set out in **Appendix H.**

Health

- This option would bring minor physical and mental health benefits to its users, particularly those who shift from car travel to active travel. There are several physical and mental health benefits associated with walking, wheeling and cycling. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City - North: Locality Plan 2021-26. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles, albeit the geographic extent of this option limits the potential for this. The overall impact is expected to be **minor positive**. (+1)

Access to Health and Wellbeing Infrastructure

- It is anticipated that this option could contribute to improved access to health and wellbeing facilities for those walking, wheeling or cycling, such as to GP surgeries and health centres in the local area, however the option on its own would not provide improved access directly to these facilities. Improved access to green spaces (for example, Stoneyton Park and green spaces to the west of Greenburn Road) could also have a minor positive impact on health and wellbeing. The overall impact on Access to Health and Wellbeing Infrastructure is expected to be **minor positive**. (+1)

Visual Amenity

- Potential visual effects would be limited to active travel users and residential receptors that overlook Bankhead Road, Greenburn Road and Millhill Brae. Construction activities would temporarily diminish the existing levels of visual amenity, although these are expected to be small-scale and for a short period of time. Once operational, the option is anticipated to result in slight changes to views attributable to, for example, new signage, but overall composition and focus of views would be unaltered. By encouraging and facilitating mode shift from motorised modes of transport, the number of private car trips would be anticipated to reduce and so too would the negative impact on visual amenity, although not to any significant extent. The overall impact is expected to be **neutral**. (0)

9.4.5 AT41a/b – Improve active travel access to the retail park at the Bucksburn Roundabout

Accidents

- It is considered that improved active travel access to the retail park at the Bucksburn Roundabout could have a **minor positive impact** on the Accidents sub-criterion. Proposed works include the creation of either a shared use facility between the A947 crossing and the retail park or carriageway width reduction to facilitate a segregated two-way cycleway. Widening of the footway would reduce the risk of accidents and collisions between active travel users and general traffic. This would be expected to improve safety conditions and perceptions, particularly for less experienced cyclists and vulnerable and underrepresented groups including children, women and disabled people. Similarly, provision of a segregated two-way cycleway would reduce the risk of accidents and collisions between active travel users and between active travel users and general traffic. Reduction of the A947 central reserve and reduced speed limit associated with the implementation of the segregated cycleway option (AT41b) would require further investigation and consultation to determine feasibility. (+1)

Security

- The implementation of this option is expected to make walking, wheeling and cycling more appealing to individuals and increase modal share of these modes. Increasing the number of people out and about walking, wheeling and cycling can have a positive impact on personal security due to increased natural surveillance. The overall impact on Security is expected to be **minor positive**. (+1)

Health

- This option would bring minor physical and mental health benefits to its users, particularly those who shift from car travel to active travel. There are several physical and mental health benefits associated

with walking, wheeling and cycling. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City - North: Locality Plan 2021-26. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles, albeit the geographic extent of this option limits the potential for this. The overall impact is expected to be **minor positive**. (+1)

Access to Health and Wellbeing Infrastructure

- It is anticipated that this option could contribute to improved access to health and wellbeing facilities for those walking, wheeling or cycling, such as to GP surgeries and health centres in the local area (for example, the Inverurie Road Clinic), however the option on its own would not provide improved access directly to these facilities. Improved access to blue and green spaces (for example, the River Don) could also have a minor positive impact on health and wellbeing, particularly for employees of the retail park at the Bucksburn Roundabout. The overall impact on Access to Health and Wellbeing Infrastructure is expected to be **minor positive**. (+1)

Visual Amenity

- Potential visual effects would be limited to users of the A947 between the toucan crossing to the north of the Old Meldrum Road junction and the retail park at the Bucksburn Roundabout, and residential properties and businesses that overlook this section of the A947. Construction activities would temporarily diminish the existing levels of visual amenity, although these are expected to be small-scale and for a short period of time. Once operational the option is anticipated to result in slight changes to views attributable to, for example, new active travel provision and signage and, potentially, to enable the provision of a shared use facility, relocated lighting columns and removal of vegetation but overall composition and focus of views would be unaltered. By encouraging and facilitating mode shift from motorised modes of transport, the number of private car trips would be anticipated to reduce and so too would the negative impact on visual amenity, although not to any significant extent. The overall impact is expected to be **neutral**. (0)

9.4.6 AT43 – Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)

Accidents

- The creation of a bound surface would reduce trip hazards and risks of cyclists coming off their bikes, and the potential new crossing point (to be explored at the next design stage) could improve safety for those crossing between the northbound and southbound bus stops, as well as the widened shared use path being progressed under Option AT58. This would be expected to have a **minor positive impact** on the Accidents sub-criterion. (+1)

Security

- With the geographic extent of this option limiting its overall impact, it would not be expected to provide significant support for an increase in the number of walking, wheeling and cycling trips in the study area. There would therefore be limited impact on personal security. The overall impact on the Security sub-criterion is expected to be **neutral**. (0)

Health

- This option would bring minor physical and mental health benefits to its users, particularly those who shift from car travel to active travel (including as part of multi-modal journeys involving public transport). There are several physical and mental health benefits associated with walking, wheeling and cycling. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City - North: Locality Plan 2021-26. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions

attributed to modal shift away from private vehicles, albeit the geographic extent of this option limits the potential for this. The overall impact is expected to be **minor positive**. (+1)

Access to Health and Wellbeing Infrastructure

- It is anticipated that this option could contribute to improved access to health and wellbeing facilities for those walking, wheeling or cycling to facilities such as to GP surgeries and health centres in the local area, however the option on its own would not provide improved access directly to these facilities. Improved access to green and blue spaces around the River Don could have a minor impact on health and wellbeing. This option provides a degree of connectivity with the nearby access to the Formartine and Buchan Way; however the opportunity for substantial connectivity improvement is limited by the existing constraints of the B977 corridor, specifically the restricted visibility and narrow cross section under the Formartine and Buchan overbridge which negates opportunity for allocation of a dedicated active travel space. It is anticipated that there would be few users joining or leaving the Formartine and Buchan Way at this point. Overall, the option relates to improvements to an existing path and the overall impact on Access to Health and Wellbeing Infrastructure associated with this option, in isolation, is expected to be **neutral**. (0)

Visual Amenity

- Potential visual effects would be limited to active travel users and the residential receptor that overlooks the existing path between the old and new A947. Construction activities would temporarily diminish the existing levels of visual amenity, although these are expected to be small-scale and for a short period of time. Once operational the option is anticipated to result in slight changes to views attributable to new bound surface, and potentially a new crossing point, but the overall composition and focus of views would be unaltered. Sensitive design and choice of materials would ensure this option is developed in keeping with the natural environment. Overall, the impact is expected to be **neutral**. (0)

9.4.7 AT48a – Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North

Accidents

- This option provides the opportunity for improved active travel connectivity along the A947 corridor through the implementation of new shared use and segregated cycleway facilities, between the Bucksburn Roundabout and Riverview Drive Roundabout North. The promotion of an overall coherent and connected network afforded by this option would be expected to improve safety conditions and perceptions, particularly for less experienced cyclists and vulnerable and underrepresented groups including children, women and disabled people.
- Benefits arising from reduced accidents as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £17,400 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**
- The overall impact on Accidents is expected to be **moderate positive**. (+2)

Security

- The implementation of this option is expected to make walking, wheeling and cycling more appealing to individuals and increase modal share of these modes. Increasing the number of people out and about walking, wheeling and cycling can have a positive impact on personal security due to increased natural surveillance. The overall impact on Security is expected to be **minor positive**. (+1)

Health

- This option, through enabling and facilitating active travel on this section of the A947 (supporting the promotion of an overall coherent and connected active travel network), would bring physical and mental health benefits to its users, particularly those who shift from car travel to active travel. There are several physical and mental health benefits associated with walking, wheeling and cycling. Access to active

travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. This option, through facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City - North: Locality Plan 2021-26. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles, albeit this would be dependent on the level of modal shift achieved.

- The health benefits of increased rates of active travel as a result of the option have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). AMAT provides assessments of the health and economic impacts of walking and cycling on premature mortality and on rates of absenteeism[11]. Outputs from the tool show that the measures implemented as part of this option could reduce premature deaths equating to benefits of up to £1,210,020 over a 20-year appraisal period. Additionally, AMAT indicates that there would be 121 less days of short-term sick leave per year, which equates to benefits of up to £201,960 over the same appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**

- The overall impact is expected to be **moderate positive**. (+2)

Access to Health and Wellbeing Infrastructure

- It is anticipated that this option could contribute to improved access to health and wellbeing facilities for those walking, wheeling or cycling, such as to GP surgeries and health centres in the local area (e.g. Gilbert Road Medical Group and the Inverurie Road Clinic), however the option on its own would not provide improved access directly to these facilities. This option could indirectly improve access to blue and green spaces in the vicinity of the River Don, which could have a minor positive impact on health and wellbeing. The overall impact on Access to Health and Wellbeing Infrastructure is expected to be **minor positive**. (+1)

Visual Amenity

- Potential visual effects would be limited to users of the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North and businesses and residential properties that overlook this section of the A947. Construction activities would temporarily diminish the existing levels of visual amenity. Once operational this option is anticipated to result in slight changes to views attributable to new active travel infrastructure provision. However, overall composition and focus of views would be largely unaltered. By encouraging and facilitating mode shift from motorised modes of transport, the number of private car trips would be anticipated to reduce and so too would the negative impact on visual amenity, although not to any significant extent. The overall impact is expected to be **neutral**. (0)

9.4.8 AT51 – Implement with-flow segregated cycleway on Old Meldrum Road

Accidents

- It is considered that this option would have a **moderate positive impact** on the Accidents sub-criterion. Proposed works include the implementation of a with-flow segregated cycleway, which would require some localised footway narrowing to an absolute minimum width to facilitate retention of on-street parking at the northern end of Old Meldrum Road, and a reduction in on-street parking at the southern end. With-flow segregation provides a higher level of service for users and is a preferred solution in terms of safety, where there are vehicle crossovers and junctions as on Old Meldrum Road. This would be anticipated to reduce the risk of accidents and collisions between cyclists and general traffic, particularly at junctions. This would be expected to improve safety conditions and perceptions, particularly for less experienced cyclists and vulnerable and underrepresented groups including children, women and disabled people.

- Benefits arising from reduced accidents as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £1,620 over a 20-year appraisal

[11] AMAT applies a number of assumptions based on the estimated number of walk and cycle trips as a result of the option. Further details are set out in **Appendix H.**

period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**

- The overall impact on Accidents is expected to be **moderate positive**. (+2)

Security

- The implementation of this option is expected to make cycling more appealing to individuals and increase modal share. Increasing the number of people out and about cycling can have a positive impact on personal security due to increased natural surveillance. The overall impact on Security is expected to be **minor positive**. (+1)

Health

- This option would bring minor physical and mental health benefits to its users, particularly those who shift from car travel to cycling. There are several physical and mental health benefits associated with cycling. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. This option, through facilitating cycling, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City - North: Locality Plan 2021-26. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles, dependent on the level of modal shift that can be achieved.

- The health benefits of increased rates of active travel as a result of the option have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). AMAT provides assessments of the health and economic impacts of walking and cycling on premature mortality and on rates of absenteeism[12]. Outputs from the tool show that the measures implemented as part of this option could reduce premature deaths equating to benefits of up to £133,220 over a 20-year appraisal period. Additionally, AMAT indicates that there would be 15 less days of short-term sick leave per year, which equates to benefits of up to £25,660 over the same appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**

- The overall impact is expected to be **minor positive**. (+1)

Access to Health and Wellbeing Infrastructure

- It is anticipated that this option could contribute to improved access to health and wellbeing facilities for those walking, wheeling or cycling, such as to GP surgeries and health centres in the local area (e.g. Gilbert Road Medical Group), however the option on its own would not provide improved access directly to these facilities. Improved access to green spaces (for example to the Auchmill Nature Walk on the north side of Auchmill Road) could also have a minor positive impact on health and wellbeing. There could also be wider benefits on access to green space to the south of Auchmill Road opposite the Old Meldrum Road Junction (outwith the study area). The overall impact on Access to Health and Wellbeing Infrastructure is expected to be **minor positive**. (+1)

Visual Amenity

- Potential visual effects would be limited to active travel users, and residential and business receptors that overlook Old Meldrum Road. Construction activities would temporarily diminish the existing levels of visual amenity. Once operational the option is anticipated to result in slight changes to views attributable to the new section of segregated cycleway and some localised footway narrowing (at the northern end of Old Meldrum Road) and reduction in on-street parking (at the southern end of Old Meldrum Road), but overall composition and focus of views would be unaltered. By encouraging and facilitating mode shift from motorised modes of transport and reducing on-street parking, the number of private car trips would be anticipated to reduce and so too would the negative impact on visual amenity, although not to any significant extent. The overall impact is expected to be **neutral**. (0)

[12] AMAT applies a number of assumptions based on the estimated number of walk and cycle trips as a result of the option. Further details are set out in **Appendix H.**

9.4.9 AT52 – Implement two-way segregated cycleway on Old Meldrum Road

Accidents

- It is considered that this option would have a **minor positive impact** on the Accidents sub-criterion. Proposed works include the implementation of a two-way segregated cycleway, which would require a reduction in on-street parking at the southern end of Old Meldrum Road. This would be anticipated to reduce the risk of accidents and collisions between cyclists and general traffic. This would be expected to improve safety conditions and perceptions, particularly for less experienced cyclists and vulnerable and underrepresented groups including children, women and disabled people, albeit to a lesser extent than Option AT51.
- Benefits arising from reduced accidents as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £1,620 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**
- The overall impact on Accidents is expected to be **minor positive**. (+1)

Security

- The implementation of this option is expected to make cycling more appealing to individuals and increase modal share. Increasing the number of people out and about cycling can have a positive impact on personal security due to increased natural surveillance. The overall impact on Security is expected to be **minor positive**. (+1)

Health

- This option would bring minor physical and mental health benefits to its users, particularly those who shift from car travel to cycling. There are several physical and mental health benefits associated with cycling. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. This option, through facilitating cycling, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City - North: Locality Plan 2021-26. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles, dependent on the level of modal shift that can be achieved.
- The health benefits of increased rates of active travel as a result of the option have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). AMAT provides assessments of the health and economic impacts of walking and cycling on premature mortality and on rates of absenteeism[13]. Outputs from the tool show that the measures implemented as part of this option could reduce premature deaths equating to benefits of up to £133,220 over a 20-year appraisal period. Additionally, AMAT indicates that there would be 15 less days of short-term sick leave per year, which equates to benefits of up to £25,660 over the same appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**
- The overall impact is expected to be **minor positive**. (+1)

Access to Health and Wellbeing Infrastructure

- It is anticipated that this option could contribute to improved access to health and wellbeing facilities for those walking, wheeling or cycling, such as to GP surgeries and health centres in the local area (e.g. Gilbert Road Medical Group), however the option on its own would not provide improved access directly to these facilities. Improved access to green spaces (for example to the Auchmill Nature Walk on the north side of Auchmill Road) could also have a minor positive impact on health and wellbeing. There could also be wider benefits on access to green space to the south of Auchmill Road opposite the Old

[13] AMAT applies a number of assumptions based on the estimated number of walk and cycle trips as a result of the option. Further details are set out in **Appendix H.**

Meldrum Road Junction (outwith the study area). The overall impact on Access to Health and Wellbeing Infrastructure is expected to be **minor positive**. (+1)

Visual Amenity

- Potential visual effects would be limited to active travel users, and residential and business receptors that overlook Old Meldrum Road. Construction activities would temporarily diminish the existing levels of visual amenity. Once operational the option is anticipated to result in slight changes to views attributable to the new section of segregated cycleway and reduction in on-street parking (at the southern end of Old Meldrum Road), but overall composition and focus of views would be unaltered. By encouraging and facilitating mode shift from motorised modes of transport and reducing on-street parking, the number of private car trips would be anticipated to reduce and so too would the negative impact on visual amenity, although not to any significant extent. The overall impact is expected to be **neutral**. (0)

9.4.10 AT58 – Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport

Accidents

- It is considered that the implementation of a shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate, including a reduced speed limit and priority pedestrian crossings on the section of Dyce Drive between Pitmedden Road and the Industrial Estate, would have a **moderate positive impact** on the Accidents sub-criterion. These measures would reduce the risk and severity of accidents and collisions between active travel users and general traffic. Accident survival rates are higher when a pedestrian is hit by a car driving at 20mph, compared to 30mph[14,15]. This would be expected to improve safety conditions and perceptions, particularly for less experienced cyclists and vulnerable and underrepresented groups including children, women and disabled people.

- Benefits arising from reduced accidents as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £1,290 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**

- The overall impact on Accidents is expected to be **moderate positive**. (+2)

Security

- The implementation of this option is expected to make walking, wheeling and cycling more appealing to individuals and increase modal share of these modes. Increasing the number of people out and about walking, wheeling and cycling can have a positive impact on personal security due to increased natural surveillance. The overall impact on Security is expected to be **minor positive**. (+1)

Health

- This option would bring minor physical and mental health benefits to its users, particularly those who shift from car travel to active travel. There are several physical and mental health benefits associated with walking, wheeling and cycling. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City - North: Locality Plan 2021-26. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles, albeit this would be dependent on the level of modal shift achieved.

[14] Jones, S., Brunt, H., Twenty Miles Per Hour Speed Limits: A Sustainable Solution to Public Health Problems in Wales, 2017, quoted in https://gov.wales/sites/default/files/publications/2019-08/the-state-of-the-evidence-on-20mph-speed-limits-with-regards-to-road-safety-active-travel-and-air-pollution-impacts-august-2018.pdf

[15] The Royal Society for the Prevention of Accidents, Road Safety Factsheet: 20mph Zones and Speed Limits, September 2023, https://www.rospa.com/getmedia/bb8e6293-6255-4d39-9af9-78375f57d878/20mph-Zones-and-Speed-Limits-Factsheet-2023.pdf

- The health benefits of increased rates of active travel as a result of the option have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). AMAT provides assessments of the health and economic impacts of walking and cycling on premature mortality and on rates of absenteeism[16]. Outputs from the tool show that the measures implemented as part of this option could reduce premature deaths equating to benefits of up to £387,300 over a 20-year appraisal period. Additionally, AMAT indicates that there would be 39 less days of short-term sick leave per year, which equates to benefits of up to £65,200 over the same appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**

- The overall impact is expected to be **minor positive**. (+1)

Access to Health and Wellbeing Infrastructure

- It is anticipated that this option would be limited in its ability to improve access to health and wellbeing facilities for those walking, wheeling or cycling, such as to GP surgeries and health centres in the local area, and would not provide improved linkages directly to these facilities. This option could indirectly improve access to blue and green spaces in the vicinity of the River Don, which could have a minor positive impact on health and wellbeing, particularly for employees of the business units located adjacent to Dyce Road and within Kirkhill Industrial Estate. It could also facilitate trips between Kirkhill Industrial Estate and the Formartine & Buchan Way. The overall impact on Access to Health and Wellbeing Infrastructure is expected to be **minor positive**. (+1)

Visual Amenity

- Potential visual effects would be limited to users of Dyce Drive between the A947 and Kirkhill Industrial Estate, and businesses that overlook this section of Dyce Drive. Construction activities would temporarily diminish the existing levels of visual amenity. Once operational this option is anticipated to result in slight changes to views attributable to new active travel provision and, along the eastern part of the link, the removal of vegetation and creation of a new section of shared use path. However, overall composition and focus of views would be largely unaltered. By encouraging and facilitating mode shift from motorised modes of transport, the number of private car trips would be anticipated to reduce and so too would the negative impact on visual amenity, although not to any significant extent. The overall impact is expected to be **neutral**. (0)

9.4.11 AT61a – Implement package of active travel measures on Victoria Street

Accidents

- It is considered that the implementation of active travel measures along Victoria Street, including a reduced speed limit, removal of on-street parking, mixed traffic street measures and sections of segregated cycleway, would have a **moderate positive impact** on the Accidents sub-criterion. These measures would reduce the risk and severity of accidents and collisions between active travel users and between active travel users and general traffic. Accident survival rates are higher when a pedestrian is hit by a car driving at 20mph, compared to 30mph[17,18]. Safety conditions and perceptions would be expected to improve, particularly for less experienced cyclists and vulnerable and underrepresented groups including children, women and disabled people.

- Benefits arising from reduced accidents as a result of increased rates of active travel have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). The results from the toolkit indicate that there would be benefits of approximately £2,300 over a 20-year appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**

[16] AMAT applies a number of assumptions based on the estimated number of walk and cycle trips as a result of the option. Further details are set out in **Appendix H.**
[17] Jones, S., Brunt, H., Twenty Miles Per Hour Speed Limits: A Sustainable Solution to Public Health Problems in Wales, 2017, quoted in https://gov.wales/sites/default/files/publications/2019-08/the-state-of-the-evidence-on-20mph-speed-limits-with-regards-to-road-safety-active-travel-and-air-pollution-impacts-august-2018.pdf
[18] The Royal Society for the Prevention of Accidents, Road Safety Factsheet: 20mph Zones and Speed Limits, September 2023, https://www.rospa.com/getmedia/bb8e6293-6255-4d39-9af9-78375f57d878/20mph-Zones-and-Speed-Limits-Factsheet-2023.pdf

- The overall impact on Accidents is expected to be **moderate positive**. (+2)

Security

- The implementation of this option is expected to make walking, wheeling and cycling more appealing to individuals and increase modal share of these modes. Increasing the number of people out and about walking, wheeling and cycling can have a positive impact on personal security due to increased natural surveillance. The overall impact on Security is expected to be **minor positive**. (+1)

Health

- This option would bring physical and mental health benefits to its users, particularly those who shift from car travel to active travel, through improving accessibility and active travel opportunities in the 'heart' of Dyce. This will be further supported by the continued redistribution of vehicular traffic to the A947 route via Riverview Drive, following the reclassification of the Roads Hierarchy. There are several physical and mental health benefits associated with walking, wheeling and cycling. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. This option, through enabling and facilitating active travel and enhancing the sense of place through the centre of Dyce, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City - North: Locality Plan 2021-26. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles, albeit this would be dependent on the level of modal shift achieved.

- The health benefits of increased rates of active travel as a result of the option have been quantified using the Department for Transport (DfT) Active Mode Appraisal Toolkit (AMAT). AMAT provides assessments of the health and economic impacts of walking and cycling on premature mortality and on rates of absenteeism[19]. Outputs from the tool show that the measures implemented as part of this option could reduce premature deaths equating to benefits of up to £176,670 over a 20-year appraisal period. Additionally, AMAT indicates that there would be 19 less days of short-term sick leave per year, which equates to benefits of up to £32,280 over the same appraisal period. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**

- The overall impact is expected to be **moderate positive**. (+2)

Access to Health and Wellbeing Infrastructure

- It is anticipated that this option would improve direct access to health and wellbeing facilities for those walking, wheeling or cycling, such as to GP surgeries and health centres in the centre of Dyce (for example New Dyce Medical Practice) for those living in proximity to Victoria Street, and indirectly via improved active travel links within relatively close proximity to Dyce Rail Station for onward links to facilities in the wider area. This option could improve access to green spaces, for example Dyce Boys & Girls Club, Dyce Bowling Club and play parks (and, to a lesser extent, Central Park, located to the east of the Victoria Street area), which could have a positive impact on health and wellbeing, particularly for local residents and employees of businesses located along Victoria Street. The overall impact on Access to Health and Wellbeing Infrastructure is expected to be **moderate positive**. (+2)

Visual Amenity

- Potential visual effects would be limited to users of Victoria Street and residents and businesses that overlook this route. Construction activities would temporarily diminish the existing levels of visual amenity, particularly between Riverview Drive South Roundabout and Farburn Terrace where verge space is required to create a segregated cycleway. Once operational, this option is anticipated to result in slight changes to views attributable to new active travel provision, the removal of on-street parking, and the removal of vegetation to create a segregated cycleway. However, overall composition and focus of views would be largely unaltered. By encouraging and facilitating mode shift from motorised modes of transport, the number of private car trips would be anticipated to reduce and so too would the negative

[19] AMAT applies a number of assumptions based on the estimated number of walk and cycle trips as a result of the option. Further details are set out in **Appendix H.**

impact on visual amenity. Overall, it is anticipated that the sense of place would be enhanced and the overall impact is expected to be **minor positive**. (+1)

9.4.12 AT65 – Implement streetscape improvements and widened pavements along Mugiemoss Road

Accidents

- It is considered that the implementation of quiet route measures would reduce road and personal safety concerns for active travel users, including children and disabled people. The implementation of active travel quiet routes which utilise quiet residential streets can be preferable to less experienced cyclists and vulnerable and underrepresented groups including children, women and disabled people than using busy main roads. By removing existing conflict to protect active travel users on the section of Mugiemoss Road between the junctions with Old Meldrum Road and Mill Drive, and reallocation of space from the road carriageway to create a widened northern footway for shared use beyond the Mill Drive junction, this option would be expected to have a **moderate positive impact** on the Accidents sub-criterion. These measures would reduce the risk of accidents and collisions between active travel users and between active travel users and general traffic. (+2)

Security

- The implementation of this option is expected to make walking, wheeling and cycling more appealing to individuals and increase modal share of these modes. Increasing the number of people out and about walking, wheeling and cycling can have a positive impact on personal security due to increased natural surveillance. The overall impact on Security is expected to be **minor positive**. (+1)

Health

- This option would bring minor physical and mental health benefits to its users, particularly those who shift from car travel to active travel. There are several physical and mental health benefits associated with walking, wheeling and cycling. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City - North: Locality Plan 2021-26. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles, albeit the geographic extent of this option limits the potential for this. The overall impact on Health is expected to be **minor positive** (+1)

Access to Health and Wellbeing Infrastructure

- It is anticipated that this option could contribute to improved access to health and wellbeing facilities for those walking, wheeling or cycling, such as to GP surgeries and health centres in the local area, however the option on its own would not provide improved access directly to these facilities. Improved access to green and blue spaces (for example paths and trails alongside the River Don) could also have a minor positive impact on health and wellbeing. The overall impact on Access to Health and Wellbeing Infrastructure is expected to be **minor positive**. (+1)

Visual Amenity

- Potential visual effects would be limited to active travel users, residential and business receptors that overlook Mugiemoss Road. Construction activities could temporarily diminish the existing levels of visual amenity. Once operational the option is anticipated to result in minor positive changes to views attributable to improved streetscape. By encouraging and facilitating mode shift from motorised modes of transport, the number of private car trips would be anticipated to reduce and so too would the negative impact on visual amenity, although not to any significant extent. The overall impact is expected to be **minor positive**. (+1)

9.4.13 PT2 – Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor

Accidents

- The introduction of bus priority at all traffic signals along the A947 corridor could encourage a modal shift away from private car use, with an associated reduction in accidents compared to the Do Minimum. Reduced vehicle kilometres travelled results in fewer interactions between road users and subsequently reduced opportunities for collisions to occur. However, this would be dependent on the level of modal shift that can be achieved. Given the relatively low number of signalised junctions, there is unlikely to be a significant improvement. The overall impact is expected to be **minor positive**. (+1)

Security

- The implementation of bus priority at all traffic signals along the A947 corridor would not have a direct impact on personal security. However, if this option results in increased levels of bus patronage, there could be benefits in terms of perceived security, such as for vulnerable people travelling alone. The overall impact on the Security sub-criterion is, on balance, expected to be **neutral**. (0)

Health

- Whilst the main focus of this option is on promoting increased use of bus through the introduction of bus priority at all traffic signals along the A947, there may be associated health benefits associated, with, for example, increased walking or cycling to access bus services. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles and improved traffic flow through junctions for all users, which in turn can make communities more attractive, with associated benefits on health and wellbeing. In addition, evidence shows that car commuters are more likely to suffer from strain and lack of concentration in comparison to those who use public transport. This is due to increased physical activity from walking, wheeling, or cycling to access public transport services, mental health benefits from relaxing, reading or socialising whilst riding on the service, and an increased level of social connection associated with travelling alongside other users of the service. However, given the relatively low number of signalised junctions, there are unlikely to be significant improvements. The overall impact on Health is expected to be **minor positive**. (+1)

Access to Health and Wellbeing Infrastructure

- Improved bus journey times could deliver minor benefits in terms of access to health and wellbeing infrastructure, such as GP surgeries and health centres along the A947 corridor, and via onward connections to health and wellbeing infrastructure outwith the study area. Improved access to blue spaces (for example the River Don) and green spaces (for example paths and trails alongside the River Don, Ian Mair Park, Dyce Boys & Girls Club, Dyce Bowling Club and play parks) could also have a positive impact on health and wellbeing, particularly for local residents and employees of businesses located along the corridor. However, given the relatively low number of signalised junctions, there are unlikely to be significant improvements. The overall impact on Access to Health and Wellbeing Infrastructure is expected to be **minor positive**. (+1)

Visual Amenity

- There would be no significant impacts on visual amenity associated with implementation of bus priority signals along the A947 corridor and therefore the overall impact is expected to be **neutral**. (0)

9.4.14 O2 – Review the layout of the Victoria Street/Skene Place Junction

Accidents

- This option would involve alterations to the layout of the Victoria Street/Skene Place junction to facilitate the introduction of a one-way system on Station Road and adjacent streets (Option AT33). It is considered that this would result in a minor positive impact on the Accidents sub-criterion. This option would be expected to improve the attractiveness of active travel and support quiet route measures. Safety conditions and perceptions for active travel users would be expected to improve, particularly for less experienced cyclists and vulnerable and underrepresented groups including children, women and disabled people. The overall impact is expected to be **minor positive**. (+1)

Security

- This option would involve alterations to the layout of the Victoria Street/Skene Place junction to facilitate the introduction of a one-way system on Station Road and adjacent streets (Option AT33). This option would be expected to improve the attractiveness of active travel and support quiet route measures. Increasing the number of people out and about walking, wheeling and cycling can have a positive impact on personal security due to increased natural surveillance. The overall impact on Security is expected to be **minor positive**. (+1)

Health

- This option is unlikely to have a direct impact on Health. It may bring indirect minor physical and mental health benefits to its users, through improving the attractiveness of active travel, supporting quiet route measures and thereby enhancing the sense of 'place' for these users. This may indirectly contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City - North: Locality Plan 2021-26. However, the overall direct impact of alterations to the layout of the Victoria Street/Skene Place junction to facilitate the introduction of a one-way system on Station Road and adjacent streets (Option AT33) on Health is expected to be **neutral**. (0)

Access to Health and Wellbeing Infrastructure

- This option would involve alterations to the layout of the Victoria Street/Skene Place junction to facilitate the introduction of a one-way system on Station Road and adjacent streets (Option AT33). Whilst this option would be expected to help improve the attractiveness of active travel and support quiet route measures, with potential indirect benefits for access to health and wellbeing infrastructure, it would not directly enhance and facilitate access to health and wellbeing facilities (for example GP surgeries and health centres in the local area) nor would it directly impact on access to green and blue spaces. The overall impact on Access to Health and Wellbeing Infrastructure is therefore expected to be **neutral**. (0)

Visual Amenity

- This option would involve alterations to the layout of the Victoria Street/Skene Place junction to facilitate the introduction of a one-way system on Station Road and adjacent streets (Option AT33). Potential visual effects associated with this option would be limited to users of, and properties overlooking Merrivale and the sections of Station Road and Skene Place east of Merrivale - through the introduction of a one-way system - and properties overlooking the Victoria Street/Skene Place junction. By introducing a one-way system, the attractiveness of active travel may be improved and the number of private car trips may reduce, with associated positive impacts on visual amenity. Overall, however, any impact is expected to be marginal and the overall composition and focus of views would be unaltered. The overall impact is therefore expected to be **neutral**. (0)

9.4.15 O3 – Review the layout of the Riverview Drive/Balloch Way Junction

Accidents

- This option would involve alterations to the layout of the Riverview Drive/Balloch Way junction to reduce the speed of traffic turning into Balloch Way. It is considered that this would result in a minor positive impact on reducing the risk of accidents and collisions at this junction. Whilst this may provide a marginal benefit to active travel users, due to the scope and geographic extent of this option, the overall impact on the Accidents sub-criterion is expected to be **neutral**. (0)

Security

- This option, in isolation, would be unlikely to materially impact on the personal security of users. The overall impact on Security is expected to be **neutral**. (0)

Health

- Alterations to the Riverview Drive/Balloch Way junction, in isolation, are unlikely to have a direct impact on Health. The overall impact is expected to be **neutral**. (0)

Access to Health and Wellbeing Infrastructure

- Alterations to the Riverview Drive/Balloch Way junction, in isolation, are unlikely to have a direct impact in terms of access to health and wellbeing facilities (for example GP surgeries and health centres in the local area) nor directly impact on access to green and blue spaces. The overall impact on Access to Health and Wellbeing Infrastructure is therefore expected to be **neutral**. (0)

Visual Amenity

- Potential visual effects associated with this option would be limited to users and residential properties overlooking the Riverview Drive/Balloch Way junction. Overall, however, any impact is expected to be marginal and the overall composition and focus of views would be unaltered. The overall impact is therefore expected to be **neutral**. (0)

9.4.16 O4 – Review the layout of the Riverview Drive/Todlaw Walk Junction

Accidents

- This option would involve alterations to the layout of the Riverview Drive/Todlaw Walk junction to reduce the speed of traffic turning into Todlaw Walk. It is considered that this would result in a minor positive impact on reducing the risk of accidents and collisions at this junction. Whilst this may provide a marginal benefit to active travel users, due to the scope and geographic extent of this option, the overall impact on the Accidents sub-criterion is expected to be **neutral**. (0)

Security

- This option, in isolation, would be unlikely to materially impact on the personal security of users. The overall impact on Security is expected to be **neutral**. (0)

Health

- Alterations to the Riverview Drive/Todlaw Walk junction, in isolation, are unlikely to have a direct impact on Health. The overall impact is expected to be **neutral**. (0)

Access to Health and Wellbeing Infrastructure

- Alterations to the Riverview Drive/Todlaw Walk junction, in isolation, are unlikely to have a direct impact in terms of access to health and wellbeing facilities (for example GP surgeries and health centres in the local area) nor directly impact on access to green and blue spaces. The overall impact on Access to Health and Wellbeing Infrastructure is therefore expected to be **neutral**. (0)

Visual Amenity

- Potential visual effects associated with this option would be limited to users and residential properties overlooking the Riverview Drive/Todlaw Walk junction. Overall, however, any impact is expected to be marginal and the overall composition and focus of views would be unaltered. The overall impact is therefore expected to be **neutral**. (0)

9.4.17 O5 – Review the layout of the Riverview Drive/Netherview Avenue Junction

Accidents

- This option would involve alterations to the layout of the Riverview Drive/Netherview Avenue junction to reduce the speed of traffic turning into Netherview Avenue. It is considered that this would result in a minor positive impact on reducing the risk of accidents and collisions at this junction. This may provide a marginal benefit to active travel users, including children travelling to Dyce Academy by active modes, and, on this basis, the overall impact is expected to be **minor positive**. (+1)

Security

- This option, in isolation, would be unlikely to materially impact on the personal security of users. The overall impact on Security is expected to be **neutral**. (0)

Health

- Alterations to the Riverview Drive/Netherview Avenue junction, in isolation, are unlikely to have a direct impact on Health. The overall impact is expected to be **neutral**. (0)

Access to Health and Wellbeing Infrastructure

- Alterations to the Riverview Drive/Netherview Avenue junction, in isolation, are unlikely to have a direct impact in terms of access to health and wellbeing facilities (for example GP surgeries and health centres in the local area) nor directly impact on access to green and blue spaces. The overall impact on Access to Health and Wellbeing Infrastructure is therefore expected to be **neutral**. (0)

Visual Amenity

- Potential visual effects associated with this option would be limited to users and residential properties overlooking the Riverview Drive/Netherview Avenue junction. Overall, however, any impact is expected to be marginal and the overall composition and focus of views would be unaltered. The overall impact is therefore expected to be **neutral**. (0)

9.4.18 O7 – Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer

Accidents

- This option would involve alterations to the layout of the A947/Stoneywood Road junction to reduce the frequency of illegal turning manoeuvres occurring from vehicles continuing straight though the 'left only' exit from Stoneywood Road to the Co-op and Marks and Spencer retail access at Beech Manor. It is considered that this would result in a minor positive impact on reducing the risk of accidents and collisions at this junction. This may provide a marginal benefit to all users and the overall impact is expected to be **minor positive**. (+1)

Security

- This option, in isolation, would be unlikely to materially impact on the personal security of users. The overall impact on Security is expected to be **neutral**. (0)

Health

- Alterations to the A947/Stoneywood Road junction at the Co-op/Marks and Spencer, in isolation, are unlikely to have a direct impact on Health. The overall impact is expected to be **neutral**. (0)

Access to Health and Wellbeing Infrastructure

- Alterations to the A947/Stoneywood Road junction at the Co-op/Marks and Spencer, in isolation, are unlikely to have a direct impact on access to health and wellbeing facilities (for example GP surgeries and health centres in the local area) nor directly impact on access to green and blue spaces. The overall impact on Access to Health and Wellbeing Infrastructure is therefore expected to be **neutral**. (0)

Visual Amenity

- Potential visual effects associated with this option would be limited to users and residential properties in the vicinity of the A947/Stoneywood Road junction at the Co-op/Marks and Spencer. Depending on the scale of alteration to the junction, construction activities could temporarily diminish the existing levels of visual amenity. Once operational, the option is anticipated to result in slight changes to views, but overall composition and focus of views would be unaltered. The overall impact is therefore expected to be **neutral**. (0)

9.4.19 O8 – Review the layout of the A947/Stoneywood Brae Junction

Accidents

- This option would involve alterations to the layout of the A947/Stoneywood Brae junction to meet the minimum single- to dual-carriageway taper ratio. It is considered that this would result in a minor positive impact on reducing the risk of accidents and collisions at this junction. This would be expected to improve safety for on-road cycle users in particular, and the overall impact is expected to be **minor positive**. (+1)

Security

- This option, in isolation, would be unlikely to materially impact on the personal security of users. The overall impact on Security is expected to be **neutral**. (0)

Health

- Alterations to the layout of the A947/Stoneywood Brae junction to meet the minimum single- to dual-carriageway taper ratio, in isolation, are unlikely to have a direct impact on Health. The overall impact is expected to be **neutral**. (0)

Access to Health and Wellbeing Infrastructure

- Alterations to the layout of the A947/Stoneywood Brae junction to meet the minimum single- to dual-carriageway taper ratio, in isolation, are unlikely to have a direct impact access to health and wellbeing facilities (for example GP surgeries and health centres in the local area) nor directly impact on access to green and blue spaces. The overall impact on Access to Health and Wellbeing Infrastructure is therefore expected to be **neutral**. (0)

Visual Amenity

- Potential visual effects associated with this option would be limited to users and residential properties overlooking the A947/Stoneywood Brae junction. Overall, however, any impact is expected to be marginal and the overall composition and focus of views would be unaltered. The overall impact is therefore expected to be **neutral**. (0)

9.4.20 O10 – Review layout of the A947/McDonalds access road junction

Accidents

- This option would involve alterations to the layout of the A947/McDonalds access road junction to narrow or reposition the junction to further protect pedestrians using the at-grade crossing north of the access road. It is considered that this would result in a minor positive impact on reducing the risk of accidents and collisions at this junction. This is likely to provide a benefit to pedestrians and the overall impact is expected to be **minor positive**. (+1)

Security

- This option, in isolation, would be unlikely to materially impact on the personal security of users. The overall impact on Security is expected to be **neutral**. (0)

Health

- Alterations to the A947/McDonalds access road junction, in isolation, are unlikely to have a direct impact on Health. The overall impact is expected to be **neutral**. (0)

Access to Health and Wellbeing Infrastructure

- Alterations to the A947/McDonalds access road junction, in isolation, are unlikely to have a direct impact on access to health and wellbeing facilities (for example GP surgeries and health centres in the local area) nor directly impact on access to green and blue spaces. The overall impact on Access to Health and Wellbeing Infrastructure is therefore expected to be **neutral**. (0)

Visual Amenity

- Potential visual effects associated with this option would be limited to users of the A947/McDonalds access road junction and, potentially, a small number of residential properties at the northern end of St John's Road that overlook the junction. Depending on the scale of alteration to the junction, construction activities could temporarily diminish the existing levels of visual amenity. Once operational, any impact is expected to be marginal and the overall composition and focus of views would be unaltered. The overall impact is therefore expected to be **neutral**. (0)

9.4.21 O16 – Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce

Accidents

- It is considered that the implementation of a package of measures to support implementation of a 20-minute neighbourhood in Dyce would have a positive impact on the Accidents sub-criterion. The measures would be expected to reduce the risk and severity of accidents and collisions between active travel users and between active travel users and general traffic. Safety conditions and perceptions would be expected to improve, particularly for less experienced cyclists and vulnerable and underrepresented groups including children, women and disabled people. At this stage, the impact on Accidents is expected to be **minor positive** but further consideration should be given to the likely impact once the exact scope and location of measures to be taken forward is confirmed. (+1)

Security

- The implementation of this option is expected to make walking, wheeling and cycling more appealing to individuals and increase modal share of these modes. Increasing the number of people out and about walking, wheeling and cycling can have a positive impact on personal security due to increased natural surveillance. The overall impact on Security is expected to be **minor positive**. (+1)

Health

- This option would bring physical and mental health benefits to its users, particularly those who shift from car travel to active travel. Walking, wheeling and cycling locally allows more people to feel connected with their local community and would improve public health. Improved public realm allows for people to gather and socialise. Studies have linked the quality of public spaces to people's perceptions of attractiveness of an area, contributing towards their quality of life. By creating more pleasant, accessible, safe communities, this option would help realise these outcomes, with particular benefits likely to be realised by some of those people often disadvantaged at present (including children and disabled people). There are several physical and mental health benefits associated with walking, wheeling and cycling. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. This option, through enabling and facilitating active travel and enhancing the sense of place within Dyce, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City - North: Locality Plan 2021-26. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles, albeit this would be dependent on the level of modal shift achieved. At this stage, there is expected to be a **moderate positive impact** on Health. (+2)

Access to Health and Wellbeing Infrastructure

- It is anticipated that this option would improve direct access to health and wellbeing facilities such as New Dyce Medical Practice for those walking, wheeling or cycling in the local area, and indirectly via improved active travel links to transport stops and hubs (for example Dyce Rail Station), for onward links to facilities in the wider area. This option could improve access to green and blue spaces, for example paths and trails alongside the River Don and to a range of recreational spaces across the study area, which could have a positive impact on health and wellbeing, particularly for local residents and employees of business within Dyce. The overall impact on Access to Health and Wellbeing Infrastructure is expected to be **moderate positive**. (+2)

Visual Amenity

- Potential visual effects would be limited to users of the measures associated with this option, and residents and businesses that overlook areas where measures are implemented. Construction activities would temporarily diminish the existing levels of visual amenity, particularly where land-take is required, for example to widen paths or create segregated cycleways. Once operational, this option is anticipated to result in slight changes to views attributable to new active travel provision, and, potentially, the removal of on-street parking and the removal of vegetation in some locations. However, this would be negated through sympathetic design and landscaping to provide a better environment for active travel. By encouraging and facilitating mode shift from motorised modes of transport, the number of private car trips would be anticipated to reduce and so too would the negative impact on visual amenity. Overall, it is anticipated that the sense of place would be enhanced and the overall impact is expected to be **moderate positive**. (+2)

9.4.22 O25 – Implement access only restrictions for general traffic on Victoria Street

Accidents

- It is considered that the implementation of access only restrictions for general traffic on Victoria Street would have a moderate positive impact on the Accidents sub-criterion. This option would significantly reduce the risk and severity of accidents and collisions between active travel users and between active travel users and general traffic. Safety conditions and perceptions would be expected to improve, particularly for less experienced cyclists and vulnerable and underrepresented groups including children, women and disabled people. Overall, the impact on Accidents is expected to be **moderate positive**. (+2)

Security

- The implementation of this option is expected to make walking, wheeling and cycling more appealing to individuals and increase modal share of these modes. Increasing the number of people out and about walking, wheeling and cycling can have a positive impact on personal security due to increased natural surveillance. The overall impact on Security is expected to be **minor positive**. (+1)

Health

- This option would create a space within the centre of Dyce which is more attractive to those walking, wheeling and cycling, due to the removal of vehicular traffic. It would bring physical and mental health benefits to its users, particularly those who shift from car travel to active travel. There are several physical and mental health benefits associated with walking, wheeling and cycling. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. This option, through enabling and facilitating active travel and enhancing the sense of 'place' for these users, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City - North: Locality Plan 2021-26. Furthermore, there may be additional health benefits resulting from improved air quality due to reduced emissions attributed to removing vehicular traffic from the Victoria Street area. The overall impact on Health is expected to be **moderate positive**. (+2)

Access to Health and Wellbeing Infrastructure

- It is anticipated that this option would enhance and facilitate access to health and wellbeing facilities for those walking, wheeling or cycling, such as to GP surgeries and health centres in the centre of Dyce for those living in proximity to Victoria Street, and indirectly via improved active travel links to Dyce Rail Station for onward links to facilities in the wider area. This option could enhance and facilitate access to green spaces by active modes, for example Dyce Boys & Girls Club, Dyce Bowling Club and play areas (and, to a lesser extent, Central Park located to the east of the Victoria Street area), which could have a positive impact on health and wellbeing, particularly for local residents and employees of businesses located along Victoria Street. However, access could be impeded for some users who are reliant on vehicular access. Further assessment is required to better understand the impacts this option would have on residents, local businesses, and key transport service providers, particularly where access only restrictions place a constraint on accessibility for those who are not able to travel by active and

sustainable modes of transport. At this stage, the overall impact on Access to Health and Wellbeing Infrastructure is expected to be **minor positive**. (+1)

Visual Amenity

- Potential visual effects would be limited to users of Victoria Street and residents and businesses that overlook this section of the A947. By removing vehicular traffic from the Victoria Street area and encouraging and facilitating mode shift from motorised modes of transport, the number of private car trips would be anticipated to reduce and so too would the negative impact on visual amenity. Overall, it is anticipated that the sense of place would be enhanced and the overall impact is expected to be **moderate positive**. (+2)

9.4.23 O26 – Implement one-way restrictions for general traffic on Victoria Street

Accidents

- It is considered that the implementation of one-way restrictions for general traffic on Victoria Street would have a minor positive impact on the Accidents sub-criterion. This option would be expected to reduce levels of general traffic and reduce the risk and severity of accidents and collisions for active travel users. Safety conditions and perceptions would be expected to improve, particularly for less experienced cyclists and vulnerable and underrepresented groups including children, women and disabled people. Overall, the impact on Accidents is expected to be **minor positive**. (+1)

Security

- The implementation of this option is expected to make walking, wheeling and cycling more appealing to individuals and increase modal share of these modes. Increasing the number of people out and about walking, wheeling and cycling can have a positive impact on personal security due to increased natural surveillance. The overall impact on Security is expected to be **minor positive**. (+1)

Health

- Through creating a space within the centre of Dyce which is more attractive to those walking, wheeling and cycling this option would bring minor physical and mental health benefits to its users, particularly those who shift from car travel to active travel. There are several physical and mental health benefits associated with walking, wheeling and cycling. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. This option, through enabling and facilitating active travel and enhancing the sense of 'place' for these users, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City - North: Locality Plan 2021-26. Furthermore, there may be additional health benefits resulting from improved air quality due to reduced emissions attributed to reduced levels of general traffic on Victoria Street. The overall impact on Health is expected to be **minor positive**. (+1)

Access to Health and Wellbeing Infrastructure

- It is anticipated that this option would enhance and facilitate access to health and wellbeing facilities for those walking, wheeling or cycling, such as to GP surgeries and health centres in the centre of Dyce for those living in proximity to Victoria Street, and indirectly via improved active travel links to Dyce Rail Station for onward links to facilities in the wider area. By improving the sense of place, this option could enhance and facilitate access to green spaces by active modes, for example Dyce Boys & Girls Club, Dyce Bowling Club and play parks (and, to a lesser extent, Central Park, located to the east of the Victoria Street area), which could have a positive impact on health and wellbeing, particularly for local residents and employees of businesses located along Victoria Street. However, further assessment is required to better understand the impacts this option would have on access to health and wellbeing facilities. At this stage, the overall impact on Access to Health and Wellbeing Infrastructure is expected to be **minor positive**. (+1)

Visual Amenity

- Potential visual effects would be limited to users of Victoria Street and residents and businesses that overlook this section of the A947. By implementing one-way restrictions for general traffic on Victoria Street and encouraging and facilitating mode shift from motorised modes of transport, the number of private car trips would be anticipated to reduce and so too would the negative impact on visual amenity. Overall, it is anticipated that the sense of place would be enhanced and the overall impact is expected to be **minor positive**. (+1)

9.5 Economy

9.5.1 AT26 – Improve active travel connectivity between the A947 study area and TECA

Transport Economic Efficiency (TEE)

- In isolation, this option would be expected to have no material impact on journey time savings for users, access to markets, vehicle operating costs or fares. This option, in isolation, would not directly provide businesses with improved access to the labour market. However, there may be a minor improvement to journey quality. The overall impact on TEE is therefore expected to be **minor positive**. (+1)

Wider Economic Impacts (WEI)

- This option, in isolation, is not expected to have a direct impact on the uptake of employment and training opportunities, nor access to goods and services. It would be unlikely to have a material impact on productivity or on stimulating development. Therefore, it is anticipated that this option would have a **neutral impact** on the WEI sub-criterion. (0)

9.5.2 AT31 – Improve active travel links between the Riverside Path and housing within Dyce

Transport Economic Efficiency (TEE)

- In isolation, this option would be expected to have no material impact on journey time savings for users, access to markets, vehicle operating costs or fares. This option formalises an existing pedestrian desire line and, in isolation, would also not directly provide businesses with improved access to the labour market. However, there may be a minor improvement to journey quality. The overall impact on TEE is therefore expected to be **minor positive**. (+1)

Wider Economic Impacts (WEI)

- This option, in isolation, is not expected to have a direct impact on the uptake of employment and training opportunities, nor access to goods and services. It would be unlikely to have a material impact on productivity or on stimulating development. Therefore, it is anticipated that this option would have a **neutral impact** on the WEI sub-criterion. (0)

9.5.3 AT33 – Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road

Transport Economic Efficiency (TEE)

- In isolation, this option would be expected to have no material impact on journey time savings for users, access to markets, vehicle operating costs or fares. This option, in isolation, would also not directly provide businesses with improved access to the labour market. It may facilitate access to the labour market outwith the study area through improved links to Dyce Rail Station, but this would be an indirect impact. There may be a minor improvement to journey quality.

- The AMAT analysis has assessed the monetised value of benefits for this option. This indicates the following in terms of TEE, over the 20-year assessment period: journey ambience (£93,520), congestion benefits (£750) and indirect taxation (£0). More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.** The

total monetised benefits associated with this option are included in the Present Value of Benefits which is set out within the Cost To Government section for those benefits that can be monetised in the assessment framework.

- The overall impact on TEE is expected to be **minor positive**. (+1)

Wider Economic Impacts (WEI)

- This option, in isolation, is not expected to have a direct impact on the uptake of employment and training opportunities, nor access to goods and services. It would be unlikely to have a material impact on productivity or on stimulating development. It may facilitate access to employment and training opportunities outwith the study area through improved links to Dyce Rail Station, but this would be an indirect impact. Therefore, it is anticipated that this option would have a **neutral impact** on the WEI sub-criterion overall. (0)

9.5.4 AT35a – Implement improvements to develop a mixed-traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae

Transport Economic Efficiency (TEE)

- In isolation, this option would be expected to have no material impact on journey time savings for users, access to markets, vehicle operating costs or fares. This option, in isolation, would also not directly provide businesses with improved access to the labour market. However, there may be a minor improvement to journey quality. The impact on TEE is therefore expected to be **minor positive**. (+1)

Wider Economic Impacts (WEI)

- This option, in isolation, may provide indirect access to employment opportunities for residents to the west of the A947, however it would not provide users with a direct connection to employment and training opportunities, nor access to goods and services. It would be unlikely to have a material impact on productivity or on stimulating development. Therefore, it is anticipated that this option would have a **neutral impact** on the WEI sub-criterion overall. (0)

9.5.5 AT41a/b – Improve active travel access to the retail park at the Bucksburn Roundabout

Transport Economic Efficiency (TEE)

- In isolation, this option would be expected to have no material impact on journey time savings for users, access to markets, vehicle operating costs or fares. The reduction of the northbound carriageway to one lane – to enable the provision of a segregated two-way cycleway – may impact on traffic flow for general traffic, but due to the limited geographic extent of this option, this is not anticipated to have a notable impact on TEE. Improving non-vehicular access to the retail park (and indirectly to the local area to the west of the A947) may marginally increase access to employment, although this impact is not likely to be significant and this option would not directly provide businesses with notably improved access to the labour market. There may be a minor improvement to journey quality. The impact on TEE is therefore expected to be **minor positive** overall. (+1)

Wider Economic Impacts (WEI)

- Research shows that people who walk, wheel or cycle to shops and services spend more money. Connecting to the retail park, the measures contained in this option would be anticipated to enable and facilitate active travel journeys to local shops and services. This option is therefore expected to have a positive impact on the uptake of employment and training opportunities, and access to goods and services for residents in the Bankhead area. It would be unlikely to have a material impact on productivity or on stimulating development. Overall, it is anticipated that this option would have a **minor positive impact** on the WEI sub-criterion. (+1)

9.5.6 AT43 – Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)

Transport Economic Efficiency (TEE)

- In isolation, this option would be expected to have no material impact on journey time savings for users, access to markets, vehicle operating costs or fares. This option involves upgrading an existing path and additionally considers a proposed new crossing point (to be explored at the next design stage) to improve access between the northbound and southbound bus stops, as well as the widened shared use path being progressed under Option AT58. In isolation, this option would not directly provide businesses with improved access to the labour market. However, there may be a minor improvement to journey quality. The overall impact on TEE is expected to be **minor positive**. (+1)

Wider Economic Impacts (WEI)

- This option, in isolation, is not expected to have a direct impact on the uptake of employment and training opportunities, nor access to goods and services. It would be unlikely to have a material impact on productivity or on stimulating development. Therefore, it is anticipated that this option would have a **neutral impact** on the WEI sub-criterion. (0)

9.5.7 AT48a – Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North

Transport Economic Efficiency (TEE)

- In isolation, this option would be expected to have no material impact on journey time savings for users, access to markets, vehicle operating costs or fares. This option provides the opportunity for improved active travel connectivity along the A947 corridor through the implementation of new shared use and segregated cycleway facilities, between the Bucksburn Roundabout and Riverview Drive Roundabout North. In isolation it would not directly provide businesses with improved access to the labour market. However, there may be a minor improvement to journey quality.

- The AMAT analysis has assessed the monetised value of benefits for this option. This indicates the following in terms of TEE, over the 20-year assessment period: journey ambience (£326,840), congestion benefits (£107,990) and indirect taxation (-£40). More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.** The total monetised benefits associated with this option are included in the Present Value of Benefits which is set out within the Cost To Government section for those benefits that can be monetised in the assessment framework.

- The overall impact on TEE is expected to be **minor positive**. (+1)

Wider Economic Impacts (WEI)

- This option may provide access to employment and training opportunities in the vicinity of Stoneywood and Wellheads Avenue, however it would be unlikely to have a material impact on productivity or on stimulating development. Overall, it is anticipated that this option would have a **minor positive impact** on the WEI sub-criterion. (+1)

9.5.8 AT51 – Implement with-flow segregated cycleway on Old Meldrum Road

Transport Economic Efficiency (TEE)

- In isolation, this option would be expected to have no material impact on journey time savings for users, access to markets, vehicle operating costs or fares. There may be a minor improvement to journey quality. Removal of on-street parking could have a detrimental impact on businesses with a frontage in the southern extents of Old Meldrum Road and consultation with business owners should be undertaken to better understand the potential impacts. It is noted that the Auchmill Road car park is located adjacent to Old Meldrum Road and has capacity for up to 37 vehicles and is free to use. Parking surveys would be required to understand the nature of vehicle parking on Old Meldrum Road currently.

- The AMAT analysis has assessed the monetised value of benefits for this option. This indicates the following in terms of TEE, over the 20-year assessment period: journey ambience (£261,430), congestion benefits (£10,070) and indirect taxation (£0). More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.** The total monetised benefits associated with this option are included in the Present Value of Benefits which is set out within the Cost To Government section for those benefits that can be monetised in the assessment framework.

- At this stage, therefore, there is expected to be an overall **minor negative impact** on TEE as a result of the potentially detrimental impact that removal of on-street parking could have on nearby businesses. (-1)

Wider Economic Impacts (WEI)

- This option may provide access to a small number of employment opportunities for residents in the vicinity of Old Meldrum Road, however it would not provide users with a direct connection to wider employment and training opportunities. It would be unlikely to have a material impact on productivity or on stimulating development. Given the geographic extent of this option, the overall impact is anticipated to be **neutral**. (0)

9.5.9 AT52 – Implement two-way segregated cycleway on Old Meldrum Road

Transport Economic Efficiency (TEE)

- In isolation, this option would be expected to have no material impact on journey time savings for users, access to markets, vehicle operating costs or fares. There may be a minor improvement to journey quality. Removal of on-street parking could have a detrimental impact on businesses with a frontage in the southern extents of Old Meldrum Road and consultation with business owners should be undertaken to better understand the potential impacts. It is noted that the Auchmill Road car park is located adjacent to Old Meldrum Road, and has capacity for up to 37 vehicles and is free to use. Parking surveys would be required to understand the nature of vehicle parking on Old Meldrum Road currently.

- The AMAT analysis has assessed the monetised value of benefits for this option. This indicates the following in terms of TEE, over the 20-year assessment period: journey ambience (£261,430), congestion benefits (£10,070) and indirect taxation (£0). More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.** The total monetised benefits associated with this option are included in the Present Value of Benefits which is set out within the Cost To Government section for those benefits that can be monetised in the assessment framework.

- At this stage, therefore, there is expected to be an overall **minor negative impact** on TEE as a result of the potentially detrimental impact that removal of on-street parking could have on nearby businesses. (-1)

Wider Economic Impacts (WEI)

- This option may provide access to a small number of employment opportunities for residents in the vicinity of Old Meldrum Road, however it would not provide users with a direct connection to wider employment and training opportunities. It would be unlikely to have a material impact on productivity or on stimulating development. Given the geographic extent of this option, the overall impact is anticipated to be **neutral**. (0)

9.5.10 AT58 – Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport

Transport Economic Efficiency (TEE)

- In isolation, this option would be expected to have no material impact on journey time savings for users, access to markets, vehicle operating costs or fares. This option, in isolation, does not provide direct linkage to residential areas and would therefore not directly provide businesses with improved access to the labour market. However, there may be a minor improvement to journey quality.

- The AMAT analysis has assessed the monetised value of benefits for this option. This indicates the following in terms of TEE, over the 20-year assessment period: journey ambience (£157,860), congestion benefits (£5,380) and indirect taxation (£100). More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.** The total monetised benefits associated with this option are included in the Present Value of Benefits which is set out within the Cost To Government section for those benefits that can be monetised in the assessment framework.

- The overall impact on TEE is expected to be **minor positive**. (+1)

Wider Economic Impacts (WEI)

- This option, in isolation, does not provide direct linkage to residential areas and would therefore not be expected to improve access to employment and training opportunities, nor access to goods and services. It would be unlikely to have a material impact on productivity or on stimulating development. Therefore, it is anticipated that this option would have a **neutral impact** on the WEI sub-criterion. (0)

9.5.11 AT61a – Implement package of active travel measures on Victoria Street

Transport Economic Efficiency (TEE)

- Whilst this option would provide better access to key locations for non-car modes and reduce the prominence of private cars, overall this option would be expected to have no material impact on journey time savings for users, access to markets, vehicle operating costs or fares. This option would, however, provide businesses with marginally improved access to the local labour market through linkages between the primary residential and commercial section of Victoria Street. Removal of on-street parking could have a detrimental impact on businesses with a frontage on Victoria Street and consultation with business owners should be undertaken to better understand the potential impacts. Parking surveys would be required to understand the nature of vehicle parking on Victoria Street currently. There may be a minor improvement to journey quality.

- The AMAT analysis has assessed the monetised value of benefits for this option. This indicates the following in terms of TEE, over the 20-year assessment period: journey ambience (£99,340), congestion benefits (£14,290) and indirect taxation (-£10). More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.** The total monetised benefits associated with this option are included in the Present Value of Benefits which is set out within the Cost To Government section for those benefits that can be monetised in the assessment framework.

- At this stage, the overall impact on TEE is expected to be **minor positive**. (+1)

Wider Economic Impacts (WEI)

- Research shows that people who walk, wheel or cycle to shops and services spend more money. Through the package of improvements on Victoria Street, the measures contained in this option would be anticipated to enable and facilitate active travel journeys to local shops and services. The option should help to facilitate connections to the wider area through improved walking, wheeling and cycling links to nearby transport hubs along the route, including indirectly to Dyce Rail Station, thus also providing economic benefit to these connected areas. This option would also provide direct linkage between residential areas in the centre of Dyce and employment and training opportunities. Through enhancing the sense of place it may assist in stimulating development. Therefore, it is anticipated that this option would have a **moderate positive impact** on the WEI sub-criterion. (+2)

9.5.12 AT65 – Implement streetscape improvements and widened pavements along Mugiemoss Road

Transport Economic Efficiency (TEE)

- In isolation, this option would be expected to have no material impact on journey time savings for users, access to markets, vehicle operating costs or fares. This option may provide a small improvement in access to employment opportunities on Mugiemoss Road for local residents, and provide businesses in

this area with improved access to the labour market. There may also be a minor improvement to journey quality. Given the geographic extent of this option and the existing route provision, the overall impact on TEE is expected to be **minor positive**. (+1)

Wider Economic Impacts (WEI)

- The proposed streetscape improvements and footway widening measures contained in this option would be anticipated to enable and facilitate more active travel journeys to local shops and services. This option may also provide a small improvement in access for local residents to employment opportunities on the section of Mugiemoss Road to the south of Mill Drive. However, it would be unlikely to have a material impact on productivity or on stimulating development. Overall, it is anticipated that this option would have a **minor positive impact** on the WEI sub-criterion. (+1)

9.5.13 PT2 – Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor

Transport Economic Efficiency (TEE)

- This option would be expected to provide a degree of positive impact on journey time savings and enhanced access to markets and employment opportunities through improved traffic flow through junctions for all users. The bus priority at all traffic signals along the A947 could have a marginal impact on reducing pressures on vehicle operating costs for service operators. However, whilst there may be some minor benefits, given the relatively low number of signalised junctions, this option is unlikely to lead to significant improvements to bus journey times. In addition, adapting signals to improve bus priority with approach detection would only improve bus through-flow when buses are close to the front of queuing traffic and is unlikely to lead to significant improvements to bus journey times. There would be no direct impact on fares as a result of implementing this option. This option may provide businesses along the route with marginally improved access to the labour market. Traffic modelling would be required to determine the extent to which this option would improve traffic flow and reduce delay for users. Overall, this option would be expected to have a **minor positive impact** on TEE. (+1)

Wider Economic Impacts (WEI)

- Through implementing bus priority at all traffic signals along the A947 corridor, this option may deliver minor benefits in relation to reduced journey times and increased journey time reliability, with potential wider economic impacts in terms of enhanced social mobility, uptake of employment and training opportunities, and access to goods and services along the corridor attributable to improved accessibility by public transport (bus). However, given the relatively low number of signalised junctions, there are unlikely to be significant improvements to bus journey times and reliability. This option would be unlikely to have a material impact on productivity or on stimulating development. Overall, it is anticipated that this option would have a **minor positive impact** on the WEI sub-criterion. (+1)

9.5.14 O2 – Review the layout of the Victoria Street/Skene Place Junction

Transport Economic Efficiency (TEE)

- This option would involve alterations to the layout of the Victoria Street/Skene Place junction to facilitate the introduction of a one-way system on Station Road and adjacent streets (Option AT33). In isolation, it would be expected to have no material impact on journey time savings for users, access to markets, vehicle operating costs or fares and would also not directly provide businesses with improved access to the labour market. The impact on TEE is therefore expected to be **neutral**. (0)

Wider Economic Impacts (WEI)

- This option would involve alterations to the layout of the Victoria Street/Skene Place junction to facilitate the introduction of a one-way system on Station Road and adjacent streets (Option AT33). In isolation, it is not expected to have a direct impact on the uptake of employment and training opportunities, nor access to goods and services. It would be unlikely to have a material impact on productivity or on stimulating development. Therefore, it is anticipated that this option would have a **neutral impact** on the WEI sub-criterion. (0)

9.5.15 O3 – Review the layout of the Riverview Drive/Balloch Way Junction

Transport Economic Efficiency (TEE)

- This option, in isolation, would be expected to have no impact on journey time savings for users, access to markets, vehicle operating costs or fares and would also not directly provide businesses with improved access to the labour market. The impact on TEE is therefore expected to be **neutral**. (0)

Wider Economic Impacts (WEI)

- This option, in isolation, would not be expected to have a direct impact on the uptake of employment and training opportunities, nor access to goods and services. It would not be expected to impact on productivity or on stimulating development. Therefore, it is anticipated that this option would have a **neutral impact** on the WEI sub-criterion. (0)

9.5.16 O4 – Review the layout of the Riverview Drive/Todlaw Walk Junction

Transport Economic Efficiency (TEE)

- This option, in isolation, would be expected to have no impact on journey time savings for users, access to markets, vehicle operating costs or fares and would also not directly provide businesses with improved access to the labour market. The impact on TEE is therefore expected to be **neutral**. (0)

Wider Economic Impacts (WEI)

- This option, in isolation, would not be expected to have a direct impact on the uptake of employment and training opportunities, nor access to goods and services. It would not be expected to impact on productivity or on stimulating development. Therefore, it is anticipated that this option would have a **neutral impact** on the WEI sub-criterion. (0)

9.5.17 O5 – Review the layout of the Riverview Drive/Netherview Avenue Junction

Transport Economic Efficiency (TEE)

- This option, in isolation, would be expected to have no impact on journey time savings for users, access to markets, vehicle operating costs or fares and would also not directly provide businesses with improved access to the labour market. The impact on TEE is therefore expected to be **neutral**. (0)

Wider Economic Impacts (WEI)

- This option, in isolation, would not be expected to have a direct impact on the uptake of employment and training opportunities, nor access to goods and services. It would not be expected to impact on productivity or on stimulating development. Therefore, it is anticipated that this option would have a **neutral impact** on the WEI sub-criterion. (0)

9.5.18 O7 – Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer

Transport Economic Efficiency (TEE)

- This option, in isolation, would be expected to have no impact on journey time savings for users, access to markets, vehicle operating costs or fares and would also not directly provide businesses with improved access to the labour market. The impact on TEE is therefore expected to be **neutral**. (0)

Wider Economic Impacts (WEI)

- This option, in isolation, would not be expected to have a direct impact on the uptake of employment and training opportunities, nor access to goods and services. It would not be expected to impact on productivity or on stimulating development. Therefore, it is anticipated that this option would have a **neutral impact** on the WEI sub-criterion. (0)

9.5.19 O8 – Review the layout of the A947/Stoneywood Brae Junction

Transport Economic Efficiency (TEE)

- This option, in isolation, would be expected to have no impact on journey time savings for users, access to markets, vehicle operating costs or fares and would also not directly provide businesses with improved access to the labour market. The impact on TEE is therefore expected to be **neutral**. (0)

Wider Economic Impacts (WEI)

- This option, in isolation, would not be expected to have a direct impact on the uptake of employment and training opportunities, nor access to goods and services. It would not be expected to impact on productivity or on stimulating development. Therefore, it is anticipated that this option would have a **neutral impact** on the WEI sub-criterion. (0)

9.5.20 O10 – Review layout of the A947/McDonalds access road junction

Transport Economic Efficiency (TEE)

- This option, in isolation, would be expected to have no impact on journey time savings for users, access to markets, vehicle operating costs or fares and would also not directly provide businesses with improved access to the labour market. The impact on TEE is therefore expected to be **neutral**. (0)

Wider Economic Impacts (WEI)

- This option, in isolation, would not be expected to have a direct impact on the uptake of employment and training opportunities, nor access to goods and services. It would not be expected to impact on productivity or on stimulating development. Therefore, it is anticipated that this option would have a **neutral impact** on the WEI sub-criterion. (0)

9.5.21 O16 – Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce

Transport Economic Efficiency (TEE)

- Whilst this option would provide better access to key locations for non-car modes and reduce the prominence of private cars, overall this option would be expected to have no material impact on journey time savings for users, access to markets, vehicle operating costs or fares. This option would, however, provide businesses with marginally improved access to the local labour market through linkages between the primary residential and commercial areas of Dyce. The overall impact on TEE is therefore expected to be **minor positive**. (+1)

Wider Economic Impacts (WEI)

- Research shows that people who walk, wheel or cycle to shops and services spend more money. Through implementing a package of measures to support a 20-minute neighbourhood in Dyce, this option would be anticipated to enable and facilitate active travel journeys to local shops and services. The option would help to facilitate connections to the wider area through improved walking, wheeling and cycling links to nearby transport hubs in the study area, including Dyce Rail Station, thus also providing economic benefit to these connected areas. This option would also provide direct linkage between residential areas in the centre of Dyce and employment and training opportunities. Through enhancing the sense of place it may assist in stimulating development. Therefore, it is anticipated that this option would have a **moderate positive impact** on the WEI sub-criterion. (+2)

9.5.22 O25 – Implement access only restrictions for general traffic on Victoria Street

Transport Economic Efficiency (TEE)

- Whilst this option would provide better access to key locations for non-car modes and reduce the prominence of private cars, this option would be anticipated to impede existing access to key trip attractors in Dyce, Pitmedden Industrial Estate, Kirkhill Industrial Estate, Aberdeen International Airport/Heliport and Dyce Rail Station for vehicle users, with an associated impact on journey times,

access to markets and vehicle operating costs. Businesses would be expected to benefit from marginally improved access to the local labour market through linkages between the primary residential and commercial section of Victoria Street for active travel users, but these benefits could be negated by the restriction of access for vehicle users. Further assessment is required to determine the impact of this option. At this stage, the overall impact on TEE is expected to be **moderate negative**. (-2)

Wider Economic Impacts (WEI)

- Research shows that people who walk, wheel or cycle to shops and services spend more money. Through implementing access only restrictions for general traffic and hence improving placemaking on Victoria Street, this option would be anticipated to enable and facilitate active travel journeys to local shops, services and employment and training opportunities. Through enhancing the sense of place it may assist in stimulating development and investment. However, this option may also impact on passing trade undertaken using private vehicles. It would be challenging to implement this option on the southern half of Victoria Street without impacting access to public services and commercial units. Overall, it is anticipated that this option would have a **minor positive impact** on the WEI sub-criterion. (+1)

9.5.23 O26 – Implement one-way restrictions for general traffic on Victoria Street

Transport Economic Efficiency (TEE)

- This option would be expected to facilitate and enhance access to key locations for non-car modes and reduce the prominence of private cars in the Victoria Street area. However, the implementation of one-way restrictions for general traffic could marginally impact on journey times, access to markets and vehicle operating costs for vehicle users, including cars, buses and goods vehicles. Businesses would be expected to benefit from marginally improved access to the local labour market through linkages between the primary residential and commercial section of Victoria Street for active travel users. Further assessment is required to determine the impact of this option. At this stage, the overall impact on TEE is expected to be **minor positive**. (+1)

Wider Economic Impacts (WEI)

- Research shows that people who walk, wheel or cycle to shops and services spend more money. Through implementing one-way restrictions for general traffic and hence improving placemaking on Victoria Street, this option would be anticipated to enable and facilitate active travel journeys to local shops, services and employment and training opportunities. Through enhancing the sense of place it may assist in stimulating development and investment. However, this option may also impact on passing trade undertaken using private vehicles. Overall, it is anticipated that this option would have a **minor positive impact** on the WEI sub-criterion. (+1)

9.6 Equality and Accessibility

In Aberdeen City, around one-third (32%) of total households did not have access to a car in 2019, increasing to 57% and 52% for private renters and social renters respectively. In Aberdeenshire, around 15% of total households did not have access to a car in 2019, increasing to 48% for social renters.[20] Across Scotland as a whole in the 2011 Census, 25% of women did not have access to a car compared with only 20% of men. 46% of people whose day to day activity is limited a lot do not have access to a car. Access to a car also varies across ethnic groups, with 22% of those of White ethnicity not having access to a car, compared to 51% of those of African ethnicity and 39% of those of Caribbean or Black ethnicity not having access to a car.[21]

This Section sets out the appraisal of the options against the Equality and Accessibility sub-criteria.

9.6.1 AT26 – Improve active travel connectivity between the A947 study area and TECA

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option is expected to add to the existing active travel network and increase connectivity to Aberdeen Airport/Heliport and TECA through upgrading paths in the vicinity of TECA. This would provide a benefit for people with limited access to, or without, a car, or for those wishing to switch to more active and sustainable modes of transport. This improvement to the Active Travel Network may help to reduce car travel around TECA and Aberdeen Airport and promote modal shift to walking, wheeling and cycling. However, the geographic extent of this option limits its positive impact. Overall, it is anticipated that this option would have a **minor positive impact** on Active Travel Network Coverage. (+1)

Comparative Access by People Group

- It is considered that improved active travel connectivity between the A947 and TECA would have a **minor positive impact** on the Comparative Access by People Group sub-criterion. Proposed works include the implementation of wayfinding signage and upgrading existing paths west and south of TECA to create a bound surface, which could improve access within the vicinity of TECA for those on low incomes and without access to a car, and address mobility issues experienced by protected characteristic groups, especially disabled people and older people. However, the geographic extent of this option limits its positive impact. (+1)

Comparative Access by Geographic Location

- A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty. There is one data zone in the study area which is ranked within the fourth lowest Scottish Index of Multiple Deprivation (SIMD) decile according to the 2020 figures. This is concentrated in the Bankhead area immediately east of TECA. This option would be anticipated to provide improved active travel provision for short-distance trips between the A947 study area and TECA, as an alternative to motorised transport. This could improve accessibility to leisure activities (for example events at TECA) for those most in need. Whilst this option is expected to have a positive impact, its limited geographic extent limits its impact on Comparative Access by Geographic Location. The overall impact is expected to be **minor positive**. (+1)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. Whilst this option would not impact on the affordability of public transport, it would provide low-cost travel options (walking, wheeling, cycling) and hence have a positive impact on affordability. However, due to the limited geographic extent of this option, in isolation its impact would be

[20] Scottish Household Survey, 2019, Topic 3 – Table 3.7d, https://scotland.shinyapps.io/sg-scottish-household-survey-data-explorer/
[21] Scotland's Census, 2011, Scotland's Census (scotlandscensus.gov.uk)

limited. Overall, it is anticipated that this option would have a **minor positive impact** on Affordability. (+1)

9.6.2 AT31 – Improve active travel links between the Riverside Path and housing within Dyce

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option is expected to add to the existing active travel network and increase connectivity between Riverview Drive (south of the Todlaw Walk junction) and the Riverside Path. This would provide a benefit for people with limited access to, or without, a car, or for those wishing to switch to more active and sustainable modes of transport. This improvement to the Active Travel Network may help to promote modal shift to walking, wheeling and cycling via the Riverside Path. However, the geographic extent of this option limits its positive impact. Overall, it is anticipated that this option would have a **minor positive impact** on Active Travel Network Coverage. (+1)

Comparative Access by People Group

- This option would formalise an existing pedestrian desire line. It would provide linkage to the Riverside Path which provides a route for active travel and which is important to many groups with protected characteristics. The provision of a bound surface, dropped kerbs and tactile paving associated with this option would assist in addressing mobility issues experienced by protected characteristic groups, especially disabled people and older people. However, the geographic extent of this option limits its overall impact. The overall impact is expected to be **minor positive**. (+1)

Comparative Access by Geographic Location

- A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including data zones at high risk of transport poverty within the vicinity of this option around the northern section of Riverview Drive. This option would provide an improved active travel link between the Riverside Path and housing in Dyce. However, its limited geographic extent limits the direct impact on Comparative Access by Geographic Location. In addition, this option formalises an existing, albeit informal, pedestrian desire line and does not provide new linkage. The overall impact is expected to be **neutral**. (0)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. Whilst this option would not impact on the affordability of public transport, it would provide low-cost travel options (walking, wheeling, cycling) and hence have a positive impact on affordability. However, due to the limited geographic extent of this option, in isolation its impact would be limited. Overall, it is anticipated that this option would have a **minor positive impact** on Affordability, through providing improved access to wider active travel opportunities via the Riverside Path. (+1)

9.6.3 AT33 – Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road

Public Transport Network Coverage

- Whilst this option includes enhanced accessibility to Dyce Rail Station, it would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option is expected to add to the existing active travel network and increase links between Dyce Rail Station and the A947/eastern Dyce. This would provide a benefit for people with limited access to, or

without, a car, or for those wishing to switch to more active and sustainable modes of transport. This improvement to the Active Travel Network may help to reduce car travel to Dyce Rail Station and promote modal shift to walking, wheeling and cycling. However, the geographic extent of this option limits its positive impact. Overall, it is anticipated that this option would have a **minor positive impact** on Active Travel Network Coverage. (+1)

Comparative Access by People Group

- It is considered that enhanced accessibility to Dyce Rail Station would have a minor positive impact on the Comparative Access by People Group sub-criterion. It may marginally improve comparative access for protected characteristic groups through indirectly increasing access to employment opportunities and key services via the rail network (Dyce Rail Station) for residents of eastern Dyce, and linkages to other active travel routes, which are important to many groups with protected characteristics. The implementation of a one-way system on Station Road and adjacent streets, a new contra-flow cycle lane and removal of parking on Station Road would reduce road and personal safety concerns for active travel users, including children. Primary school-aged children would also benefit from improved active travel links between Dyce Rail Station and the eastern section of Dyce which would indirectly result in improved access to Dyce Primary School. However, the geographic extent of this option limits its overall impact. The overall impact is expected to be **minor positive**. (+1)

Comparative Access by Geographic Location

- A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including within the vicinity of this option, with data zones at high risk of transport poverty towards the north of Victoria Street and medium risk of transport poverty on either side of Station Road. This option would be anticipated to provide improved active travel provision for short-distance trips between the A947/eastern Dyce and Dyce Rail Station, as an alternative to motorised transport. However, its limited geographic extent limits its impact on Comparative Access by Geographic Location. The overall impact is expected to be **minor positive**. (+1)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. Whilst this option would not impact on the affordability of public transport, it would provide low-cost travel options (walking, wheeling, cycling) and hence have a positive impact on affordability. However, due to the limited geographic extent of this option, in isolation its impact would be limited. Overall, it is anticipated that this option would have a **minor positive impact** on Affordability. (+1)

9.6.4 AT35a – Implement improvements to develop a mixed-traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option is expected to add to the existing active travel network and improve active travel provision on the local road network to the west of the A947. This would provide a benefit for people with limited access to, or without, a car, or for those wishing to switch to more active and sustainable modes of transport. This improvement to the Active Travel Network may help to reduce car travel to the southeast of TECA, and promote modal shift to walking, wheeling and cycling. Therefore, it is anticipated that this option would have a **minor positive impact** on the Active Travel Network Coverage sub-criterion, although the geographic extent of this option limits its positive impact. (+1)

Comparative Access by People Group

- It is considered that improved active travel connectivity on the local road network to the west of the A947 would have a minor positive impact on the Comparative Access by People Group sub-criterion. Proposed works include the implementation of mixed-traffic street measures (which allows for safe, on-road cycling) on Bankhead Road, Greenburn Road and Millhill Brae, which could marginally improve comparative access and transport inclusivity for protected characteristic groups through indirectly increasing access to employment opportunities in the local area to the west of the A947. This option could also reduce road and personal safety concerns for active travel users, including children, particularly in the vicinity of Stoneywood School. The implementation of active travel measures which utilise quiet residential streets can be preferable to less experienced cyclists and vulnerable and underrepresented groups including children, women and disabled people, than using busy main roads. However, the geographic extent of this option limits its overall impact. The overall impact is expected to be **minor positive**. (+1)

Comparative Access by Geographic Location

- A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including within the vicinity of this option. There is one data zone in the study area which is ranked within the fourth lowest SIMD decile according to the 2020 figures. This is concentrated in the Bankhead area immediately east of TECA. The measures included within this option may enable this area to be better served by improved active travel provision for short-distance trips, as an alternative to motorised transport. Whilst this option is expected to have a positive impact, its limited geographic extent limits its impact on Comparative Access by Geographic Location. The overall impact is expected to be **minor positive**. (+1)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. Whilst this option would not impact on the affordability of public transport, it would provide low-cost travel options (walking, wheeling, cycling) for local trips to the west of the A947 and hence have a positive impact on affordability. However, due to the limited geographic extent of this option, in isolation its impact would be limited, and an overall **minor positive impact** would be anticipated. (+1)

9.6.5 AT41a/b – Improve active travel access to the retail park at the Bucksburn Roundabout

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option is expected to add to the existing active travel network and improve active travel provision from the north of Old Meldrum Road to the retail park at Bucksburn Roundabout. This would provide a benefit for people with limited access to, or without, a car, or for those wishing to switch to more active and sustainable modes of transport. This improvement to the Active Travel Network may help to reduce car travel around the retail park, and promote modal shift to walking, wheeling and cycling. The overall impact is anticipated to be **minor positive**. (+1)

Comparative Access by People Group

- It is considered that improved active travel connectivity to the retail park at Bucksburn Roundabout would have a minor positive impact on the Comparative Access by People Group sub-criterion. Proposed works include either upgrade of the existing footway to shared use, or provision of a segregated two-way cycleway on the west side of the A947, which could marginally improve comparative access and transport inclusivity for protected characteristic groups through indirectly increasing access to employment and retail opportunities in the local area to the west of the A947, and could reduce road and personal safety concerns for active travel users, including children. However, the

geographic extent of this option limits its overall impact. The overall impact is expected to be **minor positive**. (+1)

Comparative Access by Geographic Location

- A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty. There is one data zone in the study area which is ranked within the fourth lowest SIMD decile according to the 2020 figures. This is concentrated in the Bankhead area immediately east of TECA. This option would be anticipated to provide improved active travel provision for short-distance trips between the A947 north of the Old Meldrum Road junction and the Bucksburn Retail Park, as an alternative to motorised transport. This could improve accessibility to key amenities at the retail park for those most in need. Whilst this option is expected to have a positive impact, its limited geographic extent limits its impact on Comparative Access by Geographic Location. The overall impact is expected to be **minor positive**. (+1)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. Whilst this option would not impact on the affordability of public transport, it would provide low-cost travel options (walking, wheeling, cycling) for local trips along the A947 to the retail park at Bucksburn Roundabout and hence have a positive impact on affordability. However, due to the limited geographic extent of this option, in isolation its impact would be limited, and an overall **minor positive impact** would be anticipated. (+1)

9.6.6 AT43 – Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option is expected to add to the existing active travel network and increase connectivity between the old and new A947. It additionally considers a proposed new crossing point (to be explored at the next design stage) to improve access between the northbound and southbound bus stops, as well as the widened shared use path being progressed under Option AT58. This would provide a benefit for people with limited access to, or without a car, or for those wishing to switch to more active and sustainable modes of transport. This improvement to the Active Travel Network may help to promote modal shift to walking, wheeling and cycling and also to public transport as upgrading of the existing path would improve access to bus stops on the A947. However, the geographic extent of this option limits its positive impact. Overall, it is anticipated that this option would have a **minor positive impact** on Active Travel Network Coverage. (+1)

Comparative Access by People Group

- This option would upgrade an existing path between the old and new A947, including widening and providing a bound surface. It additionally considers a proposed new crossing point (to be explored at the next design stage) to improve access between the northbound and southbound bus stops, as well as the widened shared use path being progressed under Option AT58 and would provide linkage to onward active travel opportunities in the study area, including the Riverside Path which provides a route for active travel and which is important to many groups with protected characteristics. This would assist in addressing mobility issues experienced by protected characteristic groups, especially disabled people and older people. However, the geographic extent of this option limits its overall direct impact, and, in isolation, the overall impact is expected to be **neutral**. (0)

Comparative Access by Geographic Location

- A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including within the vicinity of this option, with data zones at high risk of transport poverty on either side of the A947 at this location in the study area. This option would provide

an improved active travel link for a small section between the old and new A947. However, its limited geographic extent and rural location limits the direct impact on Comparative Access by Geographic Location. In addition, this option provides an upgrade to an existing path but does not provide new linkage and therefore, the overall impact is expected to be **neutral**. (0)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. Whilst this option would not impact on the affordability of public transport, it would improve active travel links (low-cost travel options) and hence have a positive impact on affordability. However, due to the limited geographic extent of this option, in isolation its impact would be limited. Overall, it is anticipated that this option would have a **minor positive impact** on Affordability, through providing improved onward access to active travel opportunities in the wider area (including as part of multi-modal journeys involving public transport). (+1)

9.6.7 AT48a – Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option is expected to add to the existing active travel network by providing an overall coherent and connected network along the A947 through the implementation of new shared use and segregated cycleway facilities, between the Bucksburn Roundabout and Riverview Drive Roundabout North. This would provide a benefit for people with limited access to, or without, a car, or for those wishing to switch to more active and sustainable modes of transport. This improvement to the Active Travel Network may help to reduce car travel and promote modal shift to cycling. The overall impact is expected to be **minor positive**. (+1)

Comparative Access by People Group

- This option provides the opportunity for improved active travel connectivity along the A947 corridor through the implementation of new shared use and segregated cycleway facilities, between the Bucksburn Roundabout and Riverview Drive Roundabout North. Through the promotion of an overall coherent and connected network afforded by this option, there is an opportunity to marginally improve comparative access and transport inclusivity for protected characteristic groups, especially disabled people and older people through indirectly increasing access to employment opportunities in the local area. The overall impact is expected to be **minor positive**. (+1)

Comparative Access by Geographic Location

- A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty. There is one data zone in the study area which is ranked within the fourth lowest SIMD decile according to the 2020 figures. This is concentrated in the Bankhead area immediately east of TECA. This option would provide improved active travel facilities supporting the promotion of an overall coherent and connected active travel network along the A947 corridor. The overall impact is expected to be **minor positive**. (+1)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. Whilst this option would not impact on the affordability of public transport, it would improve active travel links (low-cost travel options) for local trips along the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North and hence have a positive impact on affordability. An overall **minor positive impact** would be anticipated. (+1)

9.6.8 AT51 – Implement with-flow segregated cycleway on Old Meldrum Road

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option is expected to add to the existing active travel network and improve cycle provision on Old Meldrum Road. This would provide a benefit for people with limited access to, or without, a car, or for those wishing to switch to more active and sustainable modes of transport. This improvement to the Active Travel Network may help to reduce car travel and promote modal shift to cycling. However, the geographic extent of this option limits its positive impact. The overall impact is expected to be **minor positive**. (+1)

Comparative Access by People Group

- Perceived road danger is the biggest single barrier to active travel use, with children and older people particularly affected. Inaccessible cycle infrastructure is the single biggest difficulty faced by disabled cyclists in the UK and women are under-represented in cycling demographics. This option supports this by promoting cycling and therefore would help enhance social inclusion and reduce inequality. This option may marginally improve comparative access and transport inclusivity for protected characteristic groups through indirectly increasing access to employment opportunities in the local area via Old Meldrum Road, and indirectly through linkages to other active travel routes, which are important to many groups with protected characteristics. However, the reduction of on-street parking at the southern end of Old Meldrum Road could affect those who rely on private cars as a mobility aid (disabled people). This group could be disproportionately impacted if they are not able to find suitable parking near services on Old Meldrum Road. The implementation of segregated cycle facilities would reduce road and personal safety concerns for users, including children. However, the geographic extent of this option limits its overall impact. The overall impact is expected to be **minor positive**. (+1)

Comparative Access by Geographic Location

- A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, although data zones in the vicinity of this option are generally identified to be at low risk of transport poverty. This option would be anticipated to provide improved active travel provision for short-distance trips on Old Meldrum Road, as an alternative to motorised transport. Whilst this option is expected to have some positive impact, its limited geographic extent limits its impact on Comparative Access by Geographic Location. On balance, the overall impact is expected to be **neutral**. (0)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. Whilst this option would not impact on the affordability of public transport, it would improve active travel links (low-cost travel options) for local trips along Old Meldrum Road and hence have a positive impact on affordability. However, due to the limited geographic extent of this option, in isolation its impact would be limited. An overall **minor positive impact** would be anticipated. (+1)

9.6.9 AT52 – Implement two-way segregated cycleway on Old Meldrum Road

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option is expected to add to the existing active travel network and improve cycle provision on Old Meldrum Road. This would provide a benefit for people with limited access to, or without, a car, or for those wishing to switch to more active and sustainable modes of transport. This improvement to the

Active Travel Network may help to reduce car travel and promote modal shift to cycling. However, the geographic extent of this option limits its positive impact. The overall impact is expected to be **minor positive**. (+1)

Comparative Access by People Group

- Perceived road danger is the biggest single barrier to active travel use, with children and older people particularly affected. Inaccessible cycle infrastructure is the single biggest difficulty faced by disabled cyclists in the UK and women are under-represented in cycling demographics. This option supports this by promoting cycling and therefore would help enhance social inclusion and reduce inequality. This option may marginally improve comparative access and transport inclusivity for protected characteristic groups through indirectly increasing access to employment opportunities in the local area via Old Meldrum Road, and indirectly through linkages to other active travel routes, which are important to many groups with protected characteristics. However, the reduction of on-street parking at the southern end of Old Meldrum Road could affect those who rely on private cars as a mobility aid (disabled people). This group could be disproportionately impacted if they are not able to find suitable parking near services on Old Meldrum Road. The implementation of segregated cycle facilities would reduce road and personal safety concerns for users, including children. The geographic extent of this option limits its overall impact. On balance, the overall impact is expected to be **minor positive**. (+1)

Comparative Access by Geographic Location

- A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, although data zones in the vicinity of this option are generally identified to be at low risk of transport poverty. This option would be anticipated to provide improved active travel provision for short-distance trips on Old Meldrum Road, as an alternative to motorised transport. Whilst this option is expected to have some positive impact, its limited geographic extent limits its impact on Comparative Access by Geographic Location. On balance, the overall impact is expected to be **neutral**. (0)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. Whilst this option would not impact on the affordability of public transport, it would improve active travel links (low-cost travel options) for local trips along Old Meldrum Road and hence have a positive impact on affordability. However, due to the limited geographic extent of this option, in isolation its impact would be limited. An overall **minor positive impact** would be anticipated. (+1)

9.6.10 AT58 – Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option is expected to add to the existing active travel network and improve active travel provision from the A947 to the Kirkhill Industrial Estate, as well as facilitating trips between Kirkhill Industrial Estate and the Formartine & Buchan Way. This option would satisfy a gap in the network in the north of the study area and would provide a benefit for people with limited access to, or without, a car, or for those wishing to switch to more active and sustainable modes of transport. This improvement to the Active Travel Network may help to reduce car travel to the Industrial Estate, and promote modal shift to walking, wheeling and cycling. The overall impact is anticipated to be **minor positive**. (+1)

Comparative Access by People Group

- Perceived road danger is the biggest single barrier to active travel use, with children and older people particularly affected. Inaccessible cycle infrastructure is the single biggest difficulty faced by disabled

cyclists in the UK and women are under-represented in cycling demographics. This option supports this by promoting cycling and therefore would help enhance social inclusion and reduce inequality. This option may marginally improve comparative access and transport inclusivity for protected characteristic groups through indirectly increasing access to employment opportunities along Dyce Drive and at Kirkhill Industrial Estate, and indirectly through linkages to other active travel routes and employment opportunities in the wider area, which are important to many groups with protected characteristics. The implementation of shared use paths would reduce road and personal safety concerns for active travel users, including children. The overall impact is expected to be **minor positive**. (+1)

Comparative Access by Geographic Location

- A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including within the vicinity of this option, with data zones identified to be at high risk of transport poverty in and around Dyce Drive. This option would be anticipated to provide improved active travel provision for trips on Dyce Drive between the A947 and Kirkhill Industrial Estate, as an alternative to motorised transport. This would satisfy a gap in the network in the north of the study area. This option is therefore expected to generate a **minor positive impact** in terms of Comparative Access by Geographic Location. (+1)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. Whilst this option would not impact on the affordability of public transport, it would provide low-cost travel options (walking, wheeling, cycling) for local trips along Dyce Drive to the Kirkhill Industrial Estate and hence have a positive impact on affordability. A **minor positive impact** would be anticipated overall. (+1)

9.6.11 AT61a – Implement package of active travel measures on Victoria Street

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option is expected to improve the existing active travel network at a local level, helping to make it easier to walk, wheel and cycle on Victoria Street and reduce conflicts with other transport modes. The option involves a variety of measures, including reduced vehicle speeds to 20mph, mixed traffic street measures, segregated cycleways and removal of on-street parking, therefore potentially making walking, wheeling and cycling more attractive and encouraging modal shift from private car. The overall impact is anticipated to be **moderate positive**. (+2)

Comparative Access by People Group

- Perceived road danger is the biggest single barrier to active travel use, with children and older people particularly affected. Inaccessible cycle infrastructure is the single biggest difficulty faced by disabled cyclists in the UK and women are under-represented in cycling demographics. This option supports this by promoting walking, wheeling and cycling and therefore would help enhance social inclusion and reduce inequality. This option would be anticipated to improve comparative access and transport inclusivity for protected characteristic groups through increasing access to employment opportunities along Victoria Street, and indirectly through linkages to other active travel routes and public transport services, for example Dyce Rail Station. These benefits are important to many groups with protected characteristics. The implementation of measures such as mixed traffic street measures and sections of segregated cycleways, removal of on-street parking and reduced speed limit to 20mph would reduce road and personal safety concerns for active travel users, including children. This option would benefit the primary residential and commercial section of Victoria Street. It could also have an indirect positive impact on trips to and from Dyce Primary School, which is located close to Victoria Street along Gordon Terrace. The overall impact is expected to be **moderate positive**. (+2)

Comparative Access by Geographic Location

- A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including within the vicinity of this option, with data zones identified to be at medium risk of transport poverty on either side of Victoria Street. This option includes the primary residential and commercial section of Victoria Street and would be anticipated to provide improved active travel provision for short- to medium-distance trips to leisure, education and employment opportunities in the local area, particularly for those without access to any other means of transport and would otherwise be unable to access key services, as an alternative to motorised transport. The overall impact is expected to be **minor positive**. (+1)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. Whilst this option would not impact on the affordability of public transport, it would provide low-cost travel options (walking, wheeling, cycling) for local trips along Victoria Street and hence have a positive impact on affordability. An overall **moderate positive impact** would be anticipated. (+2)

9.6.12 AT65 – Implement streetscape improvements and widened pavements along Mugiemoss Road

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option is expected improve the existing active travel network and remove existing active travel barriers at a local level, helping to make it easier to walk, wheel and cycle on Mugiemoss Road and reduce conflicts with other transport modes. The addition of streetscape improvements (including quiet route measures) and widened pavement is likely to facilitate walking, wheeling and cycling opportunities and encourage modal shift from private car. This would provide a benefit for people with limited access to, or without, a car, or for those wishing to switch to more active and sustainable modes of transport. However, this option is not expected to directly add to the existing network, and the geographic extent of this option limits its positive impact. The overall impact is expected to be **minor positive**. (+1)

Comparative Access by People Group

- Perceived road danger is the biggest single barrier to active travel use, with children and older people particularly affected. Inaccessible cycle infrastructure is the single biggest difficulty faced by disabled cyclists in the UK and women are under-represented in cycling demographics. This option supports this by promoting walking, wheeling and cycling and therefore would help enhance social inclusion and reduce inequality. This option may marginally improve comparative access and transport inclusivity for protected characteristic groups through directly and indirectly increasing access to employment opportunities in the local area, and through linkages to other active travel routes, which are important to many groups with protected characteristics. The implementation of quiet route measures would reduce road and personal safety concerns for active travel users, including children. The implementation of active travel quiet routes which utilise quiet residential streets can be preferable to vulnerable and underrepresented cyclists than using busy main roads. However, the geographic extent of this option limits its overall impact. The overall impact is expected to be **minor positive**. (+1)

Comparative Access by Geographic Location

- A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, although data zones within the vicinity of this option are generally identified to be at low risk of transport poverty. This option would be anticipated to provide improved active travel provision for short-distance trips along Mugiemoss Road, as an alternative to motorised transport. Whilst this option is expected to have some positive impact, its limited geographic extent limits its impact on Comparative Access by Geographic Location. On balance, the overall impact is expected to be **neutral**. (0)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. Whilst this option would not impact on the affordability of public transport, it would provide low-cost travel options (walking, wheeling, cycling) for local trips along Mugiemoss Road and hence have a positive impact on affordability. However, due to the limited geographic extent of this option, in isolation its impact would be limited, and an overall **minor positive impact** would be anticipated. (+1)

9.6.13 PT2 – Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option would not extend active travel network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Comparative Access by People Group

- The implementation of bus priority at all traffic signals along the A947 may deliver minor improvements to bus journey times and journey time reliability, which may benefit those without access to a private car who are more reliant on public transport networks, such as those on low incomes, disabled people and elderly people. This would be achieved through improving access to employment opportunities, shops and services along the A947 for these groups, and indirectly through linkages to other public transport and active travel routes for onward travel. However, given the relatively low number of signalised junctions, there are unlikely to be significant improvements to bus journey times and reliability. It is anticipated that this option would therefore provide a **minor positive impact** in terms of Comparative Access by People Group through facilitating access to employment opportunities for the working age local population and to key local services for the over-65 population. (+1)

Comparative Access by Geographic Location

- A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty. This option would be anticipated to deliver marginal improvements to bus journey times and journey time reliability for short-to medium-distance trips to leisure and employment opportunities in the local area, particularly for those without access to any other means of transport and who would otherwise be unable to access key services, as an alternative to private transport. This option provides linkage with the primary residential and commercial section of Dyce, in addition to the residential areas of Bankhead and Stoneywood. However, whilst there may be some minor benefits, given the relatively low number of signalised junctions, this is unlikely to lead to significant improvements to bus journey times and reliability. In addition, it does not provide any new transport services or increased network provision. Overall, this option would be expected to provide a **minor positive impact**. (+1)

Affordability

- This option would have no direct impact on affordability for users. There may be examples of cost savings for individuals who switch from private motorised transport to public transport as a result of the interventions, however the overall impact is expected to be **neutral**. (0)

9.6.14 O2 – Review the layout of the Victoria Street/Skene Place Junction

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option would involve alterations to the layout of the Victoria Street/Skene Place junction to facilitate the introduction of a one-way system on Station Road and adjacent streets (Option AT33). Whilst improving the attractiveness of active travel, this option would not extend active travel network coverage. The overall impact is therefore anticipated to be **neutral**. (0)

Comparative Access by People Group

- Perceived road danger is the biggest single barrier to active travel use, with children and older people particularly affected. This option would involve alterations to the layout of the Victoria Street/Skene Place junction to facilitate the introduction of a one-way system on Station Road and adjacent streets (Option AT33). It would be expected to help improve the attractiveness of active travel for users, including children, and would support quiet route measures. However, in isolation, its impact on improving comparative access and transport inclusivity for protected characteristic groups would be limited. This option would not directly facilitate nor enhance access to employment opportunities for the working age local population; to key local services for the over-65 population; nor to educational establishments for children. The overall impact is expected to be **neutral**. (0)

Comparative Access by Geographic Location

- A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including within the vicinity of this option, with data zones identified to be at medium risk of transport poverty to the east and west of Victoria Street in this location. This option would involve alterations to the layout of the Victoria Street/Skene Place junction to facilitate the introduction of a one-way system on Station Road and adjacent streets (Option AT33). This option would be expected to improve the attractiveness of active travel and support quiet route measures. However, in isolation, the scope of this option and its limited geographic extent limits its impact on Comparative Access by Geographic Location. The overall impact is expected to be **neutral**. (0)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. Whilst this option would not impact on the affordability of public transport, it may help improve the attractiveness of low-cost travel options (walking, wheeling, cycling) for local trips through facilitating the introduction of a one-way system on Station Road and adjacent streets (Option AT33). However, in isolation, the scope of this option and its limited geographic extent limits its impact. The overall impact on affordability is therefore expected to be **neutral**. (0)

9.6.15 O3 – Review the layout of the Riverview Drive/Balloch Way Junction

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option would not extend active travel network coverage. The overall impact is therefore anticipated to be **neutral**. (0)

Comparative Access by People Group

- Perceived road danger is the biggest single barrier to active travel use, with children and older people particularly affected. This option may reduce traffic speeds at this junction with a beneficial impact for active travel users, including children. However, in isolation, its impact on improving comparative

access and transport inclusivity for protected characteristic groups would be negligible. This option would not directly facilitate nor enhance access to employment opportunities for the working age local population; to key local services for the over-65 population; nor to educational establishments for children. The overall impact is expected to be **neutral**. (0)

Comparative Access by Geographic Location

- The scope of this option and its limited geographic extent limits its impact on Comparative Access by Geographic Location. The overall impact is expected to be **neutral**. (0)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. This option would not impact on the affordability of public transport. Due to the scope of this option and its limited geographic extent, in isolation its ability to improve the attractiveness of low-cost travel options (walking, wheeling, cycling) for local trips is limited. The overall impact on affordability is therefore expected to be **neutral**. (0)

9.6.16 O4 – Review the layout of the Riverview Drive/Todlaw Walk Junction

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option would not extend active travel network coverage. The overall impact is therefore anticipated to be **neutral**. (0)

Comparative Access by People Group

- Perceived road danger is the biggest single barrier to active travel use, with children and older people particularly affected. This option may reduce traffic speeds at this junction with a beneficial impact for active travel users, including children. However, in isolation, its impact on improving comparative access and transport inclusivity for protected characteristic groups would be negligible. This option would not directly facilitate nor enhance access to employment opportunities for the working age local population; to key local services for the over-65 population; nor to educational establishments for children. The overall impact is expected to be **neutral**. (0)

Comparative Access by Geographic Location

- The scope of this option and its limited geographic extent limits its impact on Comparative Access by Geographic Location. The overall impact is expected to be **neutral**. (0)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. This option would not impact on the affordability of public transport. Due to the scope of this option and its limited geographic extent, in isolation its ability to improve the attractiveness of low-cost travel options (walking, wheeling, cycling) for local trips is limited. The overall impact on affordability is therefore expected to be **neutral**. (0)

9.6.17 O5 – Review the layout of the Riverview Drive/Netherview Avenue Junction

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option would not extend active travel network coverage. The overall impact is therefore anticipated to be **neutral**. (0)

Comparative Access by People Group

- Perceived road danger is the biggest single barrier to active travel use, with children and older people particularly affected. This option may reduce traffic speeds at this junction with a beneficial impact for active travel users, including children travelling to Dyce Academy. However, in isolation, its impact on improving comparative access and transport inclusivity for protected characteristic groups would be negligible. This option would not directly facilitate nor enhance access to employment opportunities for the working age local population; nor to key local services for the over-65 population. The overall impact is expected to be **neutral**. (0)

Comparative Access by Geographic Location

- The scope of this option and its limited geographic extent limits its impact on Comparative Access by Geographic Location. The overall impact is expected to be **neutral**. (0)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. This option would not impact on the affordability of public transport. Due to the scope of this option and its limited geographic extent, in isolation its ability to improve the attractiveness of low-cost travel options (walking, wheeling, cycling) for local trips is limited. The overall impact on affordability is therefore expected to be **neutral**. (0)

9.6.18 O7 – Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option would not extend active travel network coverage. The overall impact is therefore anticipated to be **neutral**. (0)

Comparative Access by People Group

- Perceived road danger is the biggest single barrier to active travel use, with children and older people particularly affected. This option may reduce the frequency of illegal turning manoeuvres at this junction with a beneficial impact for all users. However, in isolation, its impact on improving comparative access and transport inclusivity for protected characteristic groups would be negligible. This option would not directly facilitate nor enhance access to employment opportunities for the working age local population; to key local services for the over-65 population; nor to educational establishments for young people. The overall impact is expected to be **neutral**. (0)

Comparative Access by Geographic Location

- The scope of this option and its limited geographic extent limits its impact on Comparative Access by Geographic Location. The overall impact is expected to be **neutral**. (0)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. This option would not impact on the affordability of public transport. Due to the scope of this option and its limited geographic extent, in isolation its ability to improve the attractiveness of low-cost travel options (walking, wheeling, cycling) for local trips is limited. The overall impact on affordability is therefore expected to be **neutral**. (0)

9.6.19 O8 – Review the layout of the A947/Stoneywood Brae Junction

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option would not extend active travel network coverage. The overall impact is therefore anticipated to be **neutral**. (0)

Comparative Access by People Group

- Perceived road danger is the biggest single barrier to active travel use, with children and older people particularly affected. This option may have a beneficial impact for on-road cyclists. However, in isolation, its impact on improving comparative access and transport inclusivity for protected characteristic groups would be negligible. This option would not directly facilitate nor enhance access to employment opportunities for the working age local population; to key local services for the over-65 population; nor to educational establishments for young people. The overall impact is expected to be **neutral**. (0)

Comparative Access by Geographic Location

- The scope of this option and its limited geographic extent limits its impact on Comparative Access by Geographic Location. The overall impact is expected to be **neutral**. (0)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. This option would not impact on the affordability of public transport. Due to the scope of this option and its limited geographic extent, in isolation its ability to improve the attractiveness of low-cost travel options (walking, wheeling, cycling) for local trips is limited. The overall impact on affordability is therefore expected to be **neutral**. (0)

9.6.20 O10 – Review layout of the A947/McDonalds access road junction

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option would not extend active travel network coverage. The overall impact is therefore anticipated to be **neutral**. (0)

Comparative Access by People Group

- Perceived road danger is the biggest single barrier to active travel use, with children and older people particularly affected. This option would narrow or reposition the A947/McDonalds access road junction to further protect pedestrians using the at-grade crossing north of the access road. This would provide a beneficial impact for pedestrians. However, in isolation, its impact on improving comparative access and transport inclusivity for protected characteristic groups would be negligible. It would not notably facilitate nor enhance access to employment opportunities for the working age local population; nor to educational establishments for young people. It may provide a marginal improvement to accessing key local services (for example McDonalds and Lidl) which may be of particular benefit for the over-65 population. However, the overall impact is expected to be **neutral**. (0)

Comparative Access by Geographic Location

- The scope of this option and its limited geographic extent limits its impact on Comparative Access by Geographic Location. The overall impact is expected to be **neutral**. (0)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. This option would not impact on the affordability of public transport. Due to the scope of this option and its limited geographic extent, in isolation its ability to improve the attractiveness of low-cost travel options (walking, wheeling, cycling) for local trips is limited. The overall impact on affordability is therefore expected to be **neutral**. (0)

9.6.21 O16 – Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce

Public Transport Network Coverage

- This option would not extend public transport network coverage and therefore has a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option is expected improve the existing active travel network at a local level, helping to make it easier to walk, wheel and cycle within Dyce and reduce conflicts with other transport modes. The option would involve a variety of measures to support implementation of a 20-minute neighbourhood, which may include reduced vehicle speeds to 20mph, mixed traffic street measures, segregated cycleways and removal of on-street parking, therefore potentially making walking, wheeling and cycling more attractive and encouraging modal shift from private car. The overall impact is anticipated to be **moderate positive**. (+2)

Comparative Access by People Group

- Perceived road danger is the biggest single barrier to active travel use, with children and older people particularly affected. Inaccessible cycle infrastructure is the single biggest difficulty faced by disabled cyclists in the UK and women are under-represented in cycling demographics. This option supports this by promoting walking, wheeling and cycling and therefore would help enhance social inclusion and reduce inequality. While further assessment of the project area is required, the implementation of measures to support a 20-minute neighbourhood is likely to improve conditions for local active travel and deliver social and community benefits including reduced road and personal safety concerns for active travel users, including those with protected characteristics. This option provides an opportunity to engender confidence in vulnerable and underrepresented groups who currently do not travel actively due to a lack of sufficient facilities, such as women, who are less likely to cycle than men. This option would be expected to facilitate and enhance access to employment opportunities for the working age local population; to key local services for the over-65 population; and to educational establishments for young people (including, for example, Dyce Primary School and Dyce Academy). This option would therefore be anticipated to improve comparative access and transport inclusivity for protected characteristic groups. The overall impact is expected to be **moderate positive**. (+2)

Comparative Access by Geographic Location

- A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty. This option would encompass the primary residential and commercial areas of Dyce and would provide improved active travel provision for short- to medium-distance trips to leisure, education and employment opportunities in the local area, including east-west trips, particularly for those without access to any other means of transport and would otherwise be unable to access key service as an alternative to motorised transport. The overall impact is expected to be **moderate positive**. (+2)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. Whilst this option would not impact on the affordability of public transport, it would provide low-cost travel options (walking, wheeling, cycling) for local trips within Dyce and hence have a positive impact on affordability. An overall **moderate positive impact** would be anticipated. (+2)

9.6.22 O25 – Implement access only restrictions for general traffic on Victoria Street

Public Transport Network Coverage

- Whilst it is assumed that public transport access itself would be maintained under this option, public transport network coverage would not be extended and there is therefore a **neutral impact** on this sub-criterion. (0)

Active Travel Network Coverage

- This option is expected to enhance the existing active travel network at a local level, helping to make it easier to walk, wheel and cycle on Victoria Street and reduce conflicts with other transport modes. However, this option does not extend active travel network coverage. The overall impact is therefore anticipated to be **neutral**. (0)

Comparative Access by People Group

- Perceived road danger is the biggest single barrier to active travel use, with children and older people particularly affected. Inaccessible cycle infrastructure is the single biggest difficulty faced by disabled cyclists in the UK and women are under-represented in cycling demographics. This option supports this by promoting walking, wheeling and cycling and therefore would help enhance social inclusion and reduce inequality. This option would be anticipated to improve comparative access and transport inclusivity for protected characteristic groups through facilitating and enhancing access to employment opportunities along Victoria Street, and indirectly through linkages to other active travel routes and public transport services, for example Dyce Rail Station. These benefits are important to many groups with protected characteristics. The removal of general traffic from the Victoria Street area would reduce road and personal safety concerns for active travel users, including children. Further assessment is required to better understand the impacts this option would have on residents, local businesses, and key transport service providers, particularly where access only restrictions place a constraint on accessibility for those who are not able to travel by active and sustainable modes of transport. The overall impact at this stage is expected to be **minor positive**. Future consultation will need to engage people with protected characteristics to ensure their needs are represented. (+1)

Comparative Access by Geographic Location

- A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including within the vicinity of this option, with data zones identified to be at medium risk of transport poverty to the east and west of Victoria Street in this location. This option includes the primary residential and commercial section of Victoria Street and would be anticipated to facilitate and enhance active travel provision for short- to medium-distance trips to leisure, education and employment opportunities in the local area, particularly for those without access to any other means of transport and who would otherwise be unable to access key services, as an alternative to motorised transport. The overall impact is expected to be **minor positive**. (+1)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. Whilst this option would not impact on the affordability of public transport, it would facilitate and enhance low-cost travel options (walking, wheeling, cycling) for local trips along Victoria Street and hence have a positive impact on affordability. An overall **minor positive impact** would be anticipated. (+1)

9.6.23 O26 – Implement one-way restrictions for general traffic on Victoria Street

Public Transport Network Coverage

- The implementation of one-way restrictions for general traffic on Victoria Street would impact on public transport network coverage in this location. However, it is expected that reprioritisation of the A947 along Riverview Drive would support the implementation of this option and provide an alternative route

for bus services in one direction. Overall, it is anticipated that there would be a **minor negative impact** on existing public transport network coverage along Victoria Street. (-1)

Active Travel Network Coverage

- This option is expected to improve the sense of place and enhance active travel network provision at a local level, helping to facilitate walking, wheeling and cycling on Victoria Street and reduce conflicts with other transport modes. However, this option does not extend active travel network coverage. The overall impact is therefore anticipated to be **neutral**. (0)

Comparative Access by People Group

- Perceived road danger is the biggest single barrier to active travel use, with children and older people particularly affected. Inaccessible cycle infrastructure is the single biggest difficulty faced by disabled cyclists in the UK and women are under-represented in cycling demographics. This option supports this by promoting walking, wheeling and cycling and therefore would help enhance social inclusion and reduce inequality. This option would be anticipated to improve comparative access and transport inclusivity for protected characteristic groups through facilitating and enhancing access to employment opportunities along Victoria Street, and indirectly through linkages to other active travel routes and public transport services, for example Dyce Rail Station. These benefits are important to many groups with protected characteristics. The implementation of one-way restrictions for general traffic on Victoria Street would be expected to reduce traffic levels and hence reduce road and personal safety concerns for active travel users, including children. However, this option would impact on access for some vehicle users (including bus users). Further assessment is required to better understand the impacts this option would have on residents, local businesses, and key transport service providers. The overall impact at this stage is expected to be **minor positive**. Future consultation will need to engage people with protected characteristics to ensure their needs are represented. (+1)

Comparative Access by Geographic Location

- A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including within the vicinity of this option, with data zones identified to be at medium risk of transport poverty to the east and west of Victoria Street in this location. This option includes the primary residential and commercial section of Victoria Street and would be anticipated to facilitate and enhance active travel provision for short- to medium-distance trips to leisure, education and employment opportunities in the local area, particularly for those without access to any other means of transport and who would otherwise be unable to access key services, as an alternative to motorised transport. However, this option would impact on access for some vehicle users (including bus users) who would be required to re-route via Riverview Drive to facilitate the one-way traffic flow along Victoria Street. The overall impact is expected to be **minor positive**. (+1)

Affordability

- The biggest transport-related barrier for people on low incomes is the cost of transport, particularly the cost of public transport. Whilst this option would not impact on the affordability of public transport, it would facilitate and enhance low-cost travel options (walking, wheeling, cycling) for local trips along Victoria Street and hence have a positive impact on affordability. An overall **minor positive impact** would be anticipated. (+1)

9.7 Summary

This Chapter has presented the outcomes from the STAG-based detailed options appraisal, focusing on each of the five STAG criteria. The following Chapter considers the performance of the options in terms of Deliverability.

10. Detailed Options Appraisal – Deliverability Criteria

10.1 Introduction

This chapter sets out the assessment of feasibility, affordability and public acceptability. With regards the latter, the number of responses provided (as detailed in Chapter 6) should be referred to when gauging the anticipated level of risk assigned to public acceptability. Percentages provided in the public acceptability sections are based on the proportion of those responding to the questions in the online survey.

A detailed Table 2 Design Technical Note is presented as **Appendix D** with option designs shown in **Appendix E**. A detailed cost breakdown of the Table 2 options is provided in **Appendix F.**

10.2 AT26 – Improve active travel connectivity between the A947 study area and TECA

- Feasibility

This option is considered to have **low risk** in terms of feasibility. The widening works proposed are not intended to impact the existing footway gradients, however, a review is recommended to be carried out once topographical information is obtained to ensure the upgraded footway gradients are compliant with Cycling by Design guidance. Any deviations from the standards will require the proposed design to be evaluated to maintain accessibility and user safety.

- Affordability

This option is considered to have **low risk** in terms of affordability. With the proposed footway widening, earthworks may be required in areas to accommodate tie-in between new and existing footway makeups. The number of areas anticipated to require earthworks is low and there is therefore minimal risk to the affordability of this option.

- Public Acceptability

This option is considered to have relatively **low risk** in terms of public acceptability. For members of the public, more than half of respondents (53.9%) expressed support for the option. Similarly, responses from organisations showed that 57.2% of respondents agreed with the option.

Additional comments provided by respondents supported the inclusion of increased wayfinding and widening of active travel routes.

Aberdeen Cycle Forum questioned whether resurfacing and widening of paths around TECA would represent value for money and stated that they would rather see resources directed to improvements to provide separation from traffic. They added that if existing paths at TECA are below the usual standard width, it is also unlikely that levels of usage are particularly high or capacity is an issue.

10.3 AT31 – Improve active travel links between the Riverside Path and housing within Dyce

- Feasibility

This option is considered to have **medium risk** in terms of feasibility. Current ground and drainage conditions in the verge space where the footpath will be implemented are currently unknown. Once further information is obtained about the area, discovery of poor ground and drainage conditions may impact option feasibility. However, the risk of this is considered to be low. Progression of Option AT48a introduces a risk to the feasibility of the current option design. As part of the proposed two-way segregated cycleway along Riverview Drive, the pedestrian refuge island would require removal. An approximate 10m uncontrolled crossing is within a recommended maximum length for which a continuous crossing can be considered as per LTN2/95 Section 5.2.3. Further design work would be required to further establish the feasibility of implementing a continuous uncontrolled crossing on a key strategic route alongside the delivery of Option AT48a.

- Affordability

This option is considered to have **low risk** in terms of affordability. The unknown ground and drainage conditions between the verge and trail towards the Riverside Path introduces a low risk to this option based on the affordability criterion. Discovery of unsuitable conditions may increase the capital cost of the option based on the required ground improvements and drainage works. However, requirement for significant works is anticipated to be low as no major issues were identified during a previous site walkover.

- Public Acceptability

This option is considered to have relatively **low risk** in terms of public acceptability. For members of the public, nearly two-thirds of respondents (63.5%) expressed support for the option. The level of agreement and disagreement regarding this option was broadly the same for organisation responses.

Additional comments provided by respondents requested additional pedestrian crossings across Riverview Drive to support increased pedestrian movement.

There was strong agreement from Dyce & Stoneywood Community Council during consultation for implementing a new footpath to connect the Riverside Path and housing in Dyce at the Todlaw Walk junction – it was thought that this would greatly enhance pedestrian access to the River Don path.

10.4 AT33 – Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road

- Feasibility

This option is considered to have **medium risk** in terms of feasibility. The reallocation of corridor space along Station Road would require the removal of all on-street parking.

This option is to be delivered in conjunction with a new road layout in the area which promotes one-way streets along Station Road, Merrivale and Skene Place. The contraflow cycle lane outlined in Option AT33 is dependent on these restrictions to traffic direction being implemented. Initial Swept Path Analysis (SPA) has been carried out and has identified that emergency vehicles can manoeuvre round the one-way system, however, further engagement with local emergency services will be required. The requirement for further third-party engagement presents a medium risk to this option's feasibility.

A C2 preliminary enquiry has been carried out for this area and identified apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and the requirement for diversion low. However, any diversion works required will introduce risk to the option's feasibility.

- Affordability

This option is considered to have **low risk** in terms of affordability. A C2 preliminary enquiry[22] for this area located apparatus which may be affected for a number of utility providers. The proposed works are at-grade making the risk of utility impact and requirement for diversion low. However, any diversion works required will increase the capital costs of this option.

- Public Acceptability

This option is considered to have **high risk** in terms of public acceptability. For members of the public, more than half of respondents (58.5%) stated that they disagreed with the option. No support for the option was expressed by organisations, with 71.4% strongly disagreeing.

Additional comments provided by respondents suggested that there were existing active travel routes that were sufficient for both pedestrians and cyclists, however these would benefit from improved wayfinding.

Dyce & Stoneywood Community Council stated during consultation that they disagreed with this option because the road is too narrow with the current parking arrangements.

[22] Manual of Contract Documents for Highway Works Vol. 6. New Roads and Streets Act 1991 – Diversionary Works: https://www.standardsforhighways.co.uk/tses/attachments/5743f8c2-0c25-4de0-989f-f7b3bf3c3e57?inline=true

Furthermore, despite the majority of residents having off-street parking alternatives, acceptability of new parking restrictions on this residential street may impact the option's feasibility.

10.5 AT35a – Implement improvements to develop a mixed-traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae

- Feasibility

This option is considered to have **medium risk** in terms of feasibility. A C2 preliminary enquiry has been carried out for this area and identified apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and the requirement for diversion low. However, any diversion works required will introduce risk to the option's feasibility.

At locations where raised tables are being introduced across existing junctions, new drainage gullies will be required at the base of the table's ramp due to the new construction disrupting existing flow paths. A drainage assessment will be required to ensure the addition of new drainage gullies do not have a negative impact on the existing system. Any concerns or requirements to upgrade the system will introduce risk to this option's feasibility.

The new signalised crossing and associated footway widening requires the removal of the lay-by which is located in front of the Bankhead Inn. Further engagement with the business is required to understand the impact this will have on their servicing and loading. The requirement for further third-party engagement presents a medium risk to this option's feasibility.

The reallocation of corridor space along Bankhead Road requires the removal of all on-street parking.

- Affordability

This option is considered to have **medium risk** in terms of affordability, due to the addition of raised tables as part of the option. It is anticipated that additional drainage gullies will be required at the base of the ramps as these will block the existing flow paths along Bankhead Road, Crossgates and Millhill Brae. It is estimated that the raised tables will require 12 new drainage gullies. The current drainage conditions and impact to the existing surface runoff are currently unknown due to a lack of topographical information. These unknowns are considered to present a medium risk in relation to affordability.

A C2 preliminary enquiry for this area located apparatus which may be affected for a number of utility providers. The proposed works are at-grade making the risk of utility impact and requirement for diversion low. However, any diversion works required will increase the capital costs of this option.

- Public Acceptability

This option is considered to have **medium risk** in terms of public acceptability. The level of agreement and disagreement regarding this option was broadly the same for responses from members of the public. Limited support for the option was expressed by organisations, with 42.9% strongly disagreeing.

Additional comments provided by respondents suggested that there were existing active travel routes that were sufficient for both pedestrians and cyclists, however these would benefit from improved wayfinding.

Furthermore, despite the majority of residents having off-street parking alternatives, acceptability of new parking restrictions on this residential street may impact the option's feasibility.

10.6 AT41a/b – Improve active travel access to the retail park at the Bucksburn Roundabout

- Feasibility

This option is considered to have **low to medium risk** in terms of feasibility. A C2 preliminary enquiry has been carried out for this area and identified apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and the requirement for diversion low. However, any diversion works required will introduce risk to the option's feasibility.

The widened footways for this option will create an increased volume of surface water runoff. This will be captured by the existing drainage system which serves the A947 carriageway. In addition, where raised tables are being introduced across junctions, new drainage gullies will be required at the base of the table's ramp due to the new construction disrupting existing flow paths. A drainage assessment will be required to ensure the increased runoff and additional gullies do not exceed the network's capacity. The risk of this is considered to be low, however, any requirement to upgrade the drainage network will impact on this option's feasibility.

For Option AT41b, the operational impact on the A947 due to the reduction to one lane requires analysis and may impact the feasibility of this option. The operational impact on traffic on the strategic A947 corridor, particularly public transport, would present a risk to the feasibility of delivering Option AT41b.

The overall impact on feasibility is considered to present a **low risk** for Option AT41a and a **medium risk** for Option AT41b.

- Affordability

This option is considered to have **medium to high risk** in terms of affordability. Following the footway widening as part of Option AT41a, there will be an increased volume of surface water runoff entering the existing drainage system along the A947.

Further analysis is required for Option AT41b to identify the impact that reducing the A947 to one lane at this location would have on the operation of the corridor. Significant operational impact may require further consideration of the allocation of space over the road corridor as a whole with significant escalation in cost, presenting a high risk to affordability.

Due to the addition of raised tables at the retail park, it is anticipated that additional drainage gullies will be required at the base of the ramps as these will block water run off following the existing flow paths. For Option AT41b it is proposed that there will be breaks implemented in the cycleway buffer to allow run off flow paths to remain as existing. For both Option AT41a and AT41b, a drainage assessment will be required to ensure that this increased runoff and increased number of gullies do not exceed the existing system's capability. Any requirement to upgrade the existing carriageway drainage system along this section of the A947 introduces a medium risk to the affordability criterion.

A C2 preliminary enquiry for this area located apparatus which may be affected for a number of utility providers. The proposed works for both Option AT41a and AT41b are at-grade making the risk of utility impact and requirement for diversion low. However, any diversion works required will increase capital costs.

The overall impact on affordability is considered to present a **medium risk** for Option AT41a and a **high risk** for Option AT41b.

- Public Acceptability

These options are considered to have **low to medium risk** in terms of public acceptability. There was slightly more support for Option AT41a than Option AT41b in responses from members of the public, with a higher level of disagreement with the segregated cycleway variant (AT41b). No support for the options was expressed by organisations, with more than half of these responses disagreeing with each.

Additional comments provided by respondents highlighted concerns that the volume and speed of traffic at Bucksburn Roundabout would still deter active travel users from travelling in this area.

10.7 AT43 – Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)

- Feasibility

This option is considered to have **low risk** in terms of feasibility. A C2 preliminary enquiry has been carried out for this area and identified apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and the requirement for diversion low. However, any diversion works required will introduce risk to the option's feasibility.

- Affordability

This option is considered to have **low risk** in terms of affordability. A C2 preliminary enquiry for this area located apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and requirement for diversion low. However, any diversion works required will increase the capital costs of this option.

- Public Acceptability

While no consultation was undertaken on this option, it is considered that due to the nature and location of the improvements, there would be **low risk** in terms of public acceptability.

10.8 AT48a – Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North

- Feasibility

This option is considered to have **high risk** in terms of feasibility. As part of the sections of footway widening, various additional works will be required that introduce a level of risk to the work's delivery. The location of available verge space will require the remove of existing vegetation, including impacts on established trees. A number of verges may also require minor earthworks to regrade them where new construction is proposed. These works are not anticipated to negatively impact the feasibility of this option.

A C2 preliminary enquiry has been carried out for this area and identified apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and the requirement for diversion low. However, any diversion works required will introduce risk to the option's feasibility.

As part of the works, a number of existing road signs and lighting columns will need to be relocated to the rear or front in relation to the new footway/cycleway design. Signs which have built-in lighting will be more challenging to reposition due to their associated wiring. Despite this, the relocation of road signs and lighting columns are not considered to impact the feasibility of this option.

The widened footways for this option will create an increased volume of surface water runoff. This will be captured by the existing drainage system which serves the A947 carriageway. In addition, where the raised tables are being introduced across junctions, new drainage gullies will be required at the base of the table's ramp due to the new construction disrupting existing flow paths. A drainage assessment will be required to ensure the increased runoff and additional gullies do not exceed the network's capacity. The risk of this is considered to be low, however, any requirement to upgrade the drainage network will impact on feasibility.

The biggest risk to the delivery of this option is its dependency on other active travel improvement options from Tables 1 and 2, in order to create a coherent active travel route between the Riverside Drive North roundabout and Bucksburn Roundabout. A number of options are proposed which connect the various sections of AT48a. For example, the new section of segregated cycleway to the south of Riverview Drive is located between the improvements to the south roundabout (AT16) and the improved crossing at Burnside Drive (AT4). Additionally, localised fixed constraints in the road corridor would result in the need for short sections of shared use provision with an absolute minimum width, partially reducing the attractiveness of the network for users. The cumulative impact of risk factors and dependency of other options presents a high risk to this option's feasibility.

- Affordability

This option is considered to have **medium risk** in terms of affordability due to the cumulative impact of a number of factors.

There are multiple sections within this option which may require localised earthworks to accommodate sections of new footway or cycleway construction. However, the anticipated cost associated with these works is considered to be low.

There are a number of existing footways which are proposed to be widened into A947 carriageway space. Where there are existing drainage gullies at these locations, these will require relocation to the edge of the new kerb

line, however the extent of reconfiguration over the whole route corridor will be better informed by detailed survey information.

A C2 preliminary enquiry for this area located apparatus which may be affected for a number of utility providers. The proposed works are at-grade making the risk of utility impact and requirement for diversion low. However, any diversion works required will increase the capital costs of this option.

- Public Acceptability

This option is considered to have **medium risk** in terms of public acceptability. The level of agreement and disagreement regarding this option was broadly the same for responses from members of the public. Limited support for the option was expressed by organisations, with more than half (57.1%) strongly disagreeing.

While there was agreement for this option expressed by Dyce & Stoneywood Community Council during consultation, the community council stated that this does not appear to be a feasible option without considerable expense.

Aberdeen Cycle Forum confirmed support for the majority of what was presented during consultation (in the Strategic Corridor Improvements Package) but noted that someone cycling the full length of the corridor would transition between shared use and cycleway nine times.

10.9 AT51 – Implement with-flow segregated cycleway on Old Meldrum Road

- Feasibility

This option is considered to have **medium risk** in terms of feasibility. The new kerb line on the exterior of the cycleway will disrupt the existing drainage flow paths along Old Meldrum Road. It is anticipated that gaps would be left within the kerbed buffer to enable existing surface run-off to continue as is, and, with no intended increase in impermeable area, the drainage impact is considered to have a low risk impact in terms of feasibility.

A C2 preliminary enquiry has been carried out for this area and identified apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and the requirement for diversion low. However, any diversion works required will introduce risk to the option's feasibility.

In order to implement a segregated cycleway within the Old Meldrum Road corridor, the removal of on-street parking is required in the middle and southern sections. Engagement with local residents and businesses will be required to understand the impact this change will have to them. A medium risk to the option's feasibility based on the removal of on-street parking is recognised.

- Affordability

This option is considered to have **low risk** in terms of affordability. The northern extents of the segregated cycling facility are considered indicative due to the recent Barratt Homes development. At the time of the design work being carried out, OS mapping had not yet captured the realignment of Bankhead Road, Mill Drive and Mugiemoss Road. The works were carried out using photographs captured on site by AECOM staff. Once up to date mapping or a topographical survey is obtained, changes to the current design are likely to be required. Furthermore, the southern extents of the current design pledge to tie in the segregated facilities with any junction improvements as part of the parallel A96 study. These planned future updates to the design will alter the current estimated capital cost of the option but present a low risk to the reliability of the affordability appraisal due to tie-ins being flexible to accommodate.

A C2 preliminary enquiry for this area located apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and requirement for diversion low. However, any diversion works required will increase the capital costs of this option.

The new segregated facility will require alterations to the existing drainage along Old Meldrum Road in conjunction with realigned kerb lines and introduction of ramps along the cycleway. It is anticipated that gaps would be left within the kerbed buffer to enable existing surface run-off to continue as is, and, with no intended increase in impermeable area, the drainage impact is considered to present a low risk to the affordability of this option.

- Public Acceptability

This option is considered to have **medium risk** in terms of public acceptability. The level of agreement and disagreement regarding this option was broadly the same for responses from members of the public. No support for the option was expressed by organisations, with 71.4% strongly disagreeing.

Additional comments provided by respondents raised concerns that there is not sufficient demand to warrant the implementation of this option as cyclists typically use the carriageway anyway.

10.10 AT52 – Implement two-way segregated cycleway on Old Meldrum Road

- Feasibility

This option is considered to have **medium risk** in terms of feasibility. The new kerb line on the exterior of the cycleway will disrupt the existing drainage flow paths along Old Meldrum Road. It is anticipated that gaps would be left within the kerbed buffer to enable existing surface run-off to continue as is, and, with no intended increase in impermeable area, the drainage impact is considered to have a low risk impact in terms of feasibility.

A C2 preliminary enquiry has been carried out for this area and identified apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and the requirement for diversion low. However, any diversion works required will introduce risk to the option's feasibility.

In order to implement a segregated cycleway within the Old Meldrum Road corridor, the removal of on-street parking is required in the middle and southern sections. Engagement with local residents and businesses will be required to understand the impact this change will have to them. A medium risk to the option's feasibility based on the removal of on-street parking is recognised.

- Affordability

This option is considered to have **low risk** in terms of affordability. The northern extents of the segregated cycling facility are considered indicative due to the recent Barratt Homes development. At the time of the design work being carried out, OS mapping had not yet captured the realignment of Bankhead Road, Mill Drive and Mugiemoss Road. The works were carried out using photographs captured on site by AECOM staff. Once up to date mapping or a topographical survey is obtained, changes to the current design are likely to be required. Furthermore, the southern extents of the current design pledge to tie in the segregated facilities with any junction improvements as part of the parallel A96 study. These planned future updates to the design will alter the current estimated capital cost of the option but present a low risk to the reliability of the affordability appraisal due to tie-ins being flexible to accommodate.

A C2 preliminary enquiry for this area located apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and requirement for diversion low. However, any diversion works required will increase the capital costs of this option.

The new segregated facility will require alterations to the existing drainage along Old Meldrum Road in conjunction with realigned kerb lines and introduction of ramps along the cycleway. It is anticipated that gaps would be left within the kerbed buffer to enable existing surface run-off to continue as is, and, with no intended increase in impermeable area, the drainage impact is considered to present a low risk to the affordability of this option.

- Public Acceptability

This option is considered to have **medium risk** in terms of public acceptability. The level of agreement and disagreement regarding this option was broadly the same for responses from members of the public. No support for the option was expressed by organisations, with 57.1% strongly disagreeing.

Additional comments provided by respondents raised concerns that there is not sufficient demand to warrant the implementation of this option as cyclists typically use the carriageway anyway.

10.11 AT58 – Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport

- Feasibility

This option is considered to have **high risk** in terms of feasibility. A C2 preliminary enquiry has been carried out for this area and identified apparatus which may be affected for a number of utility providers. The proposed new construction works create a risk of utility impact and the requirement for diversion. C3/4 enquiries will be carried out at a future stage, along with engagement with utility providers, and will provide a better understanding of any potential impact the works will have. The potential need for diversion works presents a medium risk to this option's feasibility.

In order to implement a shared use facility that meets Cycling by Design guidance in the eastern section, acquisition of third-party land is necessary. Discussions with landowners would be required to understand the feasibility for implementation of this option.

Implementation of a reduced speed limit on Dyce Drive would also be required to facilitate the introduction of signalised crossings for active travel user safety. The reliance on third-party land and statutory engagement for delivery of this intervention presents a high risk to this option's feasibility.

- Affordability

This option is considered to have **high risk** in terms of affordability. The requirement for third-party land may increase the overall capital cost requirements of this option. The third-party land requirement is focused on the eastern extents of this option, where the boundary fence for farmland is observed. The proposed location of the shared use facility in the northern and western extents is estimated to be within the land boundary of the carriageway and therefore assumed to be owned by ACC, however landowner checks will be required to verify this. The reliance on third-party land for delivery of this option presents a high risk to affordability until further development and engagement is undertaken.

A C2 preliminary enquiry for this area located apparatus which may be affected for a number of utility providers. The proposed works are at-grade making the risk of utility impact and requirement for diversion low. However, any diversion works required will increase the capital costs of this option.

- Public Acceptability

This option is considered to have **low risk** in terms of public acceptability overall. For members of the public, 60.8% of respondents expressed support for the option. Responses from organisations also showed some level of support for the option.

Additional comments provided by respondents suggested that the existing Formartine & Buchan Way provides a sufficient active travel route to and from the industrial estate.

10.12 AT61a – Implement package of active travel measures on Victoria Street

- Feasibility

This option is considered to have **medium risk** in terms of feasibility. A C2 preliminary enquiry has been carried out for this area and identified apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and the requirement for diversion low. However, any diversion works required will introduce risk to the option's feasibility.

It is proposed that carriageway space is sacrificed to accommodate the widened footways for shared use therefore there is no anticipated increase in impermeable area. The existing gullies will require relocation in accordance with the revised kerb line, however the overall drainage impact is considered to have a low risk impact in terms of feasibility.

In the northern section of Victoria Street, the proposed footway widening would require the removal of all on-street parking between Pitmedden Road and the northern Riverview Drive roundabout. A medium risk to the option's feasibility based on the removal of on-street parking is recognised.

The feasibility of an effective mixed traffic street through the central part of Victoria Street is also dependant on traffic conditions aligning with the recommended criteria to make this attractive.

- Affordability

This option is considered to have **medium risk** in terms of affordability. Options O25 and O26 focus on implementing restrictions to the access of vehicles along sections of Victoria Street. The current design of Option AT61a is based on the current access for vehicles. If an option is taken forward which introduces restrictions to Victoria Street, there would be an opportunity to improve on the current proposals for active travel improvements, presenting some escalation in cost and an increased risk to affordability.

A C2 preliminary enquiry for this area located apparatus which may be affected for a number of utility providers. The proposed works are at-grade making the risk of utility impact and requirement for diversion low. However, any diversion works required will increase the capital costs of this option.

- Public Acceptability

This option is considered to have **high risk** in terms of public acceptability. For members of the public, more than half of respondents (58.5%) stated that they disagreed with the option. No support for the option was expressed by organisations, with 71.4% strongly disagreeing.

Additional comments provided by respondents showed some support for improvements to make cycling more attractive along Victoria Street. It was suggested that reduced vehicle speeds would complement efforts to improve the environment for active travel users.

Dyce & Stoneywood Community Council stated during consultation that more information was needed to fully gauge the effect of mixed traffic street measures on Victoria Street.

Aberdeen Cycle Forum noted during consultation that significant reductions in the speed and volume of traffic would be required to make this a suitable location for a mixed traffic street. They added that while two different solutions are offered (mixed traffic street in the centre changing to shared use at either end), consistency of approach would be welcomed.

10.13 AT65 – Implement streetscape improvements and widened pavements along Mugiemoss Road

- Feasibility

This option is considered to have **low risk** in terms of feasibility. A C2 preliminary enquiry has been carried out for this area and identified apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and the requirement for diversion low. However, any diversion works required will introduce risk to the option's feasibility.

It is proposed that carriageway space is sacrificed to accommodate the widened footways therefore there is no anticipated increase in impermeable area. The existing gullies will require relocation in accordance with the revised kerb line, however the overall drainage impact is considered to have a low risk in terms of feasibility.

- Affordability

This option is considered to have **low risk** in terms of affordability. A C2 preliminary enquiry for this area located apparatus which may be affected for a number of utility providers. The proposed works are at-grade making the risk of utility impact and requirement for diversion low. However, any diversion works required will increase the capital costs of this option.

- Public Acceptability

This option is considered to have **medium risk** in terms of public acceptability. While 51.9% of responses from members of the public expressed support for the option, 38.5% were in disagreement. No support for the option was expressed by organisations, with 57.1% strongly disagreeing.

10.14 PT2 – Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor

- Feasibility

This option is considered to have **medium risk** in terms of feasibility. A key factor in the progression of dedicated public transport improvements across the study area would be alignment with ACC's overarching strategy for bus prioritisation, traffic signals and intelligent transport systems. Implementing localised signal improvements in isolation is anticipated to have only minor benefit and therefore there is a recognised risk to feasibility until further engagement is undertaken.

Acceptance from the bus operators on the A947 would also be a considerable factor and engagement would be required to inform effective changes and feasibility of measures.

An assessment of the proposed measures in terms of impact on other modes would also be required to better inform the feasibility of delivery of signal changes and to understand the impact this will have on active travel users throughout the study area. Any detrimental impact to these users will impact on the feasibility of the option as defined by the current scope.

- Affordability

This option is considered to have **medium risk** in terms of affordability. Proposed works to implement this option would focus on an upgrade to existing signals within the study area to improve bus prioritisation. For the purpose of the option development, it has been assumed that the costs associated with implementation are in relation to signals only.

Should a traffic assessment determine wider network improvements are required to deliver holistically for all modes, or if specialist intelligent and connected signal systems were identified for implementation based on ACC strategy, it is anticipated that this would lead to inflated costs and therefore a medium risk to affordability exists for this option.

- Public Acceptability

This option is considered to have **medium risk** in terms of public acceptability. The level of agreement and disagreement regarding this option was broadly the same for responses from members of the public. Limited support for the option was expressed by organisations, with more than half (57.1%) strongly disagreeing.

There was feedback from Dyce & Stoneywood Community Council during consultation on the need to conduct a traffic signal review to consider bus priority, with the community council stating that the density of buses on this section of road does not justify this as an option (unlike in the city centre).

10.15 O2 – Review the layout of the Victoria Street/Skene Place Junction

- Feasibility

This option is considered to have **low risk** in terms of feasibility. Initial Swept Path Analysis (SPA) has been carried out and has identified that emergency vehicles can manoeuvre round the one-way system, however further engagement with local emergency services will be required. The requirement for further third-party engagement presents a residual risk to this option's feasibility.

A C2 preliminary enquiry has been carried out for this area and identified apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and the requirement for diversion low. However, any diversion works required will introduce risk to the option's feasibility.

- Affordability

This option is considered to have **low risk** in terms of affordability. A C2 preliminary enquiry for this area located apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and requirement for diversion low. However, any diversion works required will increase the capital costs of this option.

- Public Acceptability

This option is considered to have **high risk** in terms of public acceptability. For members of the public, more than half of respondents (56.6%) stated that they disagreed with the option. No support for the option was expressed by organisations, with 71.4% strongly disagreeing.

There was disagreement expressed for this option by Dyce & Stoneywood Community Council during consultation because it was felt too much traffic will be diverted to Skene Place and the unnamed road by the Spider's Web pub – this was said to be too narrow with poor visibility at the junction with Station Road.

10.16 O3 – Review the layout of the Riverview Drive/Balloch Way Junction

- Feasibility

This option is considered to have **low risk** in terms of feasibility. A C2 preliminary enquiry has been carried out for this area and identified apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and the requirement for diversion low. However, any diversion works required will introduce risk to the option's feasibility.

- Affordability

This option is considered to have **low risk** in terms of affordability. A C2 preliminary enquiry for this area located apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and requirement for diversion low. However, any diversion works required will increase the capital costs of this option.

- Public Acceptability

This option is considered to have **low risk** in terms of public acceptability. For members of the public, 56.6% of respondents expressed support for the option. No support for the option was expressed by organisations, with 57.2% disagreeing overall. However, given the nature of the option, it is considered that the overall risk to public acceptability is low.

Additional comments provided by respondents requested additional pedestrian crossings along this section of Riverview Drive. An additional comment suggested that the current carriageway width was sufficient for both cyclists and vehicles to use.

There was agreement from Dyce & Stoneywood Community Council during consultation for increasing kerb radii at this junction, but it was thought that this should be a lower priority option if funding is an issue.

Aberdeen Cycle Forum also expressed support for this option during consultation.

10.17 O4 – Review the layout of the Riverview Drive/Todlaw Walk Junction

- Feasibility

This option is considered to have **low risk** in terms of feasibility. A C2 preliminary enquiry has been carried out for this area and identified apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and the requirement for diversion low. However, any diversion works required will introduce risk to the option's feasibility.

- Affordability

This option is considered to have **low risk** in terms of affordability. A C2 preliminary enquiry for this area located apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and requirement for diversion low. However, any diversion works required will increase the capital costs of this option.

- Public Acceptability

This option is considered to have **low risk** in terms of public acceptability. For members of the public, 57.7% of respondents expressed support for the option. No support for the option was expressed by organisations, with 57.2% disagreeing overall. However, given the nature of the option, it is considered that the overall risk to public acceptability is low.

Additional comments provided by respondents requested additional pedestrian crossings along this section of Riverview Drive. An additional comment suggested that the current carriageway width was sufficient for both cyclists and vehicles to use.

There was agreement from Dyce & Stoneywood Community Council during consultation for increasing kerb radii at this junction, but it was thought that this should be a lower priority option if funding is an issue.

Aberdeen Cycle Forum also expressed support for this option during consultation.

10.18 O5 – Review the layout of the Riverview Drive/Netherview Avenue Junction

- Feasibility

This option is considered to have **low risk** in terms of feasibility. A C2 preliminary enquiry has been carried out for this area and identified apparatus which may be affected for a number of utility providers. The proposed works are at-grade making the risk of utility impact and the requirement for diversion low. However, any diversion works required will introduce risk to the option's feasibility.

Carriageway space is reallocated to the footway as part of the proposal to reduce the junction kerb radii therefore there is no anticipated increase in impermeable area. The existing gullies will require relocation in relation to the new kerb line, however the overall drainage impact is considered to have a low risk in terms of feasibility.

- Affordability

This option is considered to have **low risk** in terms of affordability. A C2 preliminary enquiry for this area located apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and requirement for diversion low. However, any diversion works required will increase the capital costs of this option.

- Public Acceptability

This option is considered to have **low risk** in terms of public acceptability. For members of the public, 57.6% of respondents expressed support for the option. No support for the option was expressed by organisations, with 57.2% disagreeing overall. However, given the nature of the option, it is considered that the overall risk to public acceptability is low.

Additional comments provided by respondents requested additional pedestrian crossings along this section of Riverview Drive. An additional comment suggested that the current carriageway width was sufficient for both cyclists and vehicles to use.

There was agreement from Dyce & Stoneywood Community Council during consultation for increasing kerb radii at this junction, but it was thought that this should be a lower priority option if funding is an issue.

Aberdeen Cycle Forum also expressed support for this option during consultation.

10.19 O7 – Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer

- Feasibility

This option is considered to have **low risk** in terms of feasibility. A C2 preliminary enquiry has been carried out for this area and identified apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and the requirement for diversion low. However, any diversion works required will introduce risk to the option's feasibility.

As part of the works, a number of existing road signs will require to be relocated within the remaining verge space. The sign which has built-in lighting will be more challenging to reposition due to its associated wiring. Despite this, the relocation of road signs and lighting columns are not considered to impact the feasibility of this option.

- Affordability

This option is considered to have **low risk** in terms of affordability. A C2 preliminary enquiry for this area located apparatus which may be affected for a number of utility providers. The proposed works are at-grade, making the risk of utility impact and requirement for diversion low. However, any diversion works required will increase the capital costs of this option.

Adjusting the corner radii of the A947/Stoneywood Road junction will require the relocation of a sign, with associated lighting. These works are not anticipated to introduce any significant risk to the delivery cost of this option.

- Public Acceptability

This option is considered to have **low risk** in terms of public acceptability. For members of the public, two-thirds of respondents expressed support for the option. No support for the option was expressed by organisations, with 57.1% strongly disagreeing. However, given the nature of the option, it is considered that the overall risk to public acceptability is low.

There was also strong agreement from Dyce & Stoneywood Community Council for this option during consultation – it was felt that there are currently too many dangerous and irresponsible drivers making illegal right turns in this location at present.

Aberdeen Cycle Forum noted during consultation that they had previously raised safety concerns about the road layout at this location and confirmed they would welcome improvements. They added that it should be noted that some cyclists will remain on the carriageway here even if an off-road alternative is provided, and so pinch-points should be avoided.

10.20 O8 – Review the layout of the A947/Stoneywood Brae Junction

- Feasibility

This option is considered to have **low risk** in terms of feasibility. Footway widening into existing verge space is proposed and will increase impermeable area and volume of surface water runoff. It is assumed that the existing carriageway drainage has capacity to manage increased volume. A drainage assessment will be required to ensure that the increased runoff does not exceed the network's capacity. The risk is considered to be low, however, any requirement to upgrade the drainage network will impact on the feasibility of this option.

- Affordability

This option is considered to have **low risk** in terms of affordability. The radii alterations at the Stoneywood Brae junction will require the relocation of existing gullies. A drainage assessment will be required to ensure that the increased runoff from the widened footways does not exceed the existing system's capability. Any requirement to upgrade the existing carriageway drainage system along this section of the A947 introduces a low risk to the affordability criterion for this option.

- Public Acceptability

This option is considered to have **medium risk** in terms of public acceptability. The level of agreement and disagreement regarding this option was broadly the same for responses from members of the public. No support for the option was expressed by organisations, with 57.1% strongly disagreeing.

10.21 O10 – Review layout of the A947/McDonalds access road junction

- Feasibility

This option is considered to have **low risk** in terms of feasibility. The feasibility of this option is dependent on the progression of Options AT41a and AT41b. Improvements to the A947/McDonalds access road junction will only be required if the A947 carriageway at this location is reduced to one lane. If AT41a is progressed, the existing junction layout will remain due to its compliance with DMRB standards.

- Affordability

This option is considered to have **low risk** in terms of affordability. The affordability of this option is dependent on the progression of Options AT41a and AT41b. The concept of improving the A947/ McDonalds access road junction will only be progressed alongside AT41b which requires a reduction in A947 carriageway lanes. If AT41a is progressed, no changes to the existing McDonalds access road junction will take place. The affordability risk associated with the works directly related to this option is therefore considered low.

- Public Acceptability

This option is considered to have **low risk** in terms of public acceptability. For members of the public, more than half of respondents (55.7%) expressed support for the option. No support for the option was expressed by organisations, with 57.2% disagreeing overall. However, given the nature of the option, it is considered that the overall risk to public acceptability is low.

10.22 O16 – Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce

- Feasibility

This option is considered to have **medium risk** in terms of feasibility. This option requires further assessment and engagement with the local community (beyond this stage of work) to determine what measures can be implemented alongside the various active travel measures proposed in Dyce.

- Affordability

This option is considered to have **medium risk** in terms of affordability. Further development of the 20-minute neighbourhood concept is required through engagement with the local community. This will assess their needs and help to identify measures which can help improve accessibility to nearby amenities. Due to the unknown works associated with this option, there is a medium risk of scope and cost fluctuation affecting its affordability.

- Public Acceptability

This option is considered to have **medium risk** in terms of public acceptability. The level of agreement and disagreement regarding this option was broadly the same for responses from members of the public. Limited support for the option was expressed by organisations, with more than half (57.1%) strongly disagreeing.

Additional comments provided by respondents supported the implementation of measures to make Dyce a 20-minute neighbourhood. One comment suggested that the size of the Dyce area would suit a 20-minute neighbourhood and could be used as a case study for future implementation in other areas within the region.

Dyce & Stoneywood Community Council stated during consultation that more information was needed to fully understand the potential for a 20-minute neighbourhood in Dyce.

10.23 O25 – Implement access only restrictions for general traffic on Victoria Street

- Feasibility

This option is considered to have **medium risk** in terms of feasibility. This option requires further engagement with the local community, business owners and other key stakeholders to determine the impact that access only restrictions would have on them. Following this, detailed traffic analysis would be carried out to predict the changes this would make to traffic flow along Victoria Street, Riverview Drive and other roads.

- Affordability

This option is considered to have **low risk** in terms of affordability. The proposed restrictions to Victoria Street will be delivered through the installation of road signs at locations where these restrictions will be implemented. The existing road corridor layout will remain unchanged under this option and no major engineering works will be required. There is considered to be a low risk of cost fluctuation in the materials and labour required to implement O25 which have not already been accounted for.

- Public Acceptability

This option is considered to have **high risk** in terms of public acceptability. For members of the public, nearly two-thirds of respondents (65.4%) stated that they disagreed with the option. No support for the option was expressed by organisations, with 71.4% strongly disagreeing.

Additional comments provided by respondents suggested that businesses along Victoria Street would be significantly impacted by a loss of trade as a result of restricted vehicle access (and the impact of this on footfall). At the public drop-in event, it was also suggested that previous traffic management work in the area adversely affected trade.

10.24 O26 – Implement one-way restrictions for general traffic on Victoria Street

- Feasibility

This option is considered to have **medium risk** in terms of feasibility. This option requires further engagement with the local community, business owners and other key stakeholders to determine the impact that one-way restrictions would have on them. Following this, detailed traffic analysis would be carried out to predict the changes this would make to traffic flow along Victoria Street, Riverview Drive and other roads.

- Affordability

This option is considered to have **low risk** in terms of affordability. The proposed restrictions to Victoria Street will be delivered through the installation of road signs at locations where these restrictions will be implemented. The existing road corridor layout will remain unchanged under this option and no major engineering works will be required. There is considered to be a low risk of cost fluctuation in the materials and labour required to implement O26 which have not already been accounted for.

- Public Acceptability

This option is considered to have **high risk** in terms of public acceptability. For members of the public, two-thirds of respondents stated that they disagreed with the option. No support for the option was expressed by organisations, with 71.4% strongly disagreeing.

Additional comments provided by respondents suggested that businesses along Victoria Street would be significantly impacted by a loss of trade as a result of restricted vehicle access (and the impact of this on footfall). At the public drop-in event, it was also suggested that previous traffic management work in the area adversely affected trade.

Furthermore, respondents raised significant concerns regarding the effects caused by displacement of traffic as a result of the potential one-way system. In particular, comments highlighted potential safety issues resulting from an increase in traffic outside schools.

10.25 Summary

This Chapter has considered the performance of the options in terms of feasibility, affordability and likely public acceptability.

The following Chapter sets out the outcomes of a series of impact assessments undertaken to inform the Detailed Appraisal.

11. Detailed Options Appraisal – Statutory Impact Assessment Criteria

11.1 Introduction

A series of impact assessments have been undertaken as part of the Detailed Appraisal of the A947 Multi-Modal Corridor Study options. These include:

- **Equality Impact Assessment (EqIA)**: As a public body, ACC has a legal responsibility when creating new plans and policies to pay due regard to the Public Sector Equality Duty (PSED) included within the Equality Act 2010.[23] The PSED aims to eliminate unlawful discrimination, promote equality and cohesion between different groups and advance equality of opportunity. The EqIA has been prepared to determine if the options being considered as part of the Multi-Modal Corridor Study might lead to any potential impacts on groups with protected characteristics.

- **Children's Rights and Wellbeing Impact Assessment (CRWIA)**: As a public body, ACC has a legal responsibility when creating new plans and policies to pay due regard to children and young people, as per the Children and Young People (Scotland) Act 2014.[24] The CRWIA has been prepared to determine if the options being considered as part of the Multi-Modal Corridor Study might lead to any potential impacts on children and young people.

- **Health Inequalities Impact Assessment (HIIA)**: The HIIA exceeds ACC's legal duty in relation to the Equality Act 2010 by going on to consider the distribution of potential impacts on health inequalities, human rights, socio-economic circumstances and people with protected characteristics. The HIIA has been prepared to determine if the options being considered as part of the Multi-Modal Corridor Study might lead to any potential impacts on health inequalities. With around 27% of men and 35% of women in Scotland not meeting recommended guidelines for physical activity (at least 150 minutes of moderate physical activity, 75 minutes of moderate to vigorous activity, or an equivalent combination between the two per week)[25] and 29% of children not meeting the guideline (at least 60 minutes of activity on average per day)[26], the HIIA assesses where the study options can support reduction in health inequalities.

- **Fairer Scotland Duty Assessment (FSDA)**: As a public body, ACC has a legal responsibility when creating new plans and policies to pay due regard to the Fairer Scotland Duty, set out in Part 1 of the Equality Act 2010.[27] The FSDA has been prepared to determine if the options being considered as part of the Multi-Modal Corridor Study might lead to any potential impacts on socio-economically disadvantaged groups and help to reduce inequalities of outcome resulting from socio-economic disadvantage.

The following sections provide a high-level assessment of the potential impacts of the options that are being considered as part of the Multi-Modal Corridor Study.

The assessment is based on the scoring criteria set out in Chapter 8 and takes into account key evidence and issues on protected characteristic groups and other vulnerable groups from publicly available datasets and research studies.

The following options all involve a review of junction layouts/configuration:

- O2 – Review the layout of the Victoria Street/Skene Place Junction;

- O3 – Review the layout of the Riverview Drive/Balloch Way Junction;

- O4 – Review the layout of the Riverview Drive/Todlaw Walk Junction;

[23] Legislation.gov.uk (2010). Equality Act 2010. Available at: Equality Act 2010 (legislation.gov.uk)
[24] Legislation.gov.uk (2014). Children and Young People (Scotland) Act 2014. Available at: Children and Young People (Scotland) Act (legislation.gov.uk)
[25] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

[26] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

[27] Legislation.gov.uk (2010). Equality Act 2010: Part 1 Socio-Economic Inequalities. Available at: Equality Act 2010 (legislation.gov.uk)

- O5 – Review the layout of the Riverview Drive/Netherview Avenue Junction;
- O7 – Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer;
- O8 – Review the layout of the A947/Stoneywood Brae Junction; and
- O10 – Review layout of the A947/McDonalds access road junction.

These include assessing options to simplify traffic movements, reduce kerb radii, address illegal turning manoeuvres and address safety concerns.

In isolation, these options are considered to have overall **neutral impact**s across the suite of Statutory Impact Assessment criteria. The impacts in terms of EqIA, CRWIA, HIIA and FSDA are less tangible and less able to be qualified than the options with specific schemes subject to appraisal.

However, it is noted that in the case of Option O5 (Review the layout of the Riverview Drive/Netherview Avenue Junction), junction improvement could lead to reduced traffic speeds at this junction and a beneficial impact on active travel users, including children travelling to Dyce Academy. At a high level, any junction reconfiguration which improves accessibility for non-motorised users is likely to complement the various active travel options under assessment.

Overall, it is considered that more detailed commentary in terms of EqIA, CRWIA, HIIA and FSDA is not required for these options.

11.2 Equalities Impact Assessment (EqIA)

11.2.1 AT26 – Improve active travel connectivity between the A947 study area and TECA

This option provides the opportunity for improved active travel access between the A947 study area and The Event Complex Aberdeen (TECA), and key trip attractors to the west, including Aberdeen International Airport and any education, employment and leisure facilities. This could enable equality of opportunity for groups with protected characteristics, particularly those on low incomes and without access to a car.

Through the upgrading of the existing path surface to the south and west of TECA to a bound surface and improved wayfinding, there is an opportunity to address mobility issues experienced by protected characteristic groups, especially disabled people and older people.

An uptake in active travel between the A947 study area and TECA (and the other key trip attractors to the west, including Aberdeen International Airport) provides the opportunity to improve physical health and mental wellbeing outcomes. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, albeit the geographic extent of this option limits the potential for this.[28]

The construction activities associated with the option may result in negative impacts for local communities during the construction stage. The construction could have a negative impact on groups who are more vulnerable to noise, vibration, and air quality such as children, older people, disabled people, and pregnant women.[29] However, it is considered that these impacts would be temporary and limited, particularly given the scope of Option AT26.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.2.2 AT31 – Improve active travel links between the Riverside Path and housing within Dyce

This option provides the opportunity for improved active travel access in the east of the study area between large residential areas in the centre of Dyce and the Riverside Path. Through the provision of a new bound surface, dropped kerbs and tactile paving, there is an opportunity to address mobility issues experienced by protected characteristic groups, namely disabled people and older people.

An uptake in active travel to the Riverside Path from large residential areas provides the opportunity to improve

[28] Halonen, J (2015). Road traffic noise is associated with increased cardiovascular morbidity and mortality and all–cause mortality in London. Available at: Road traffic noise is associated with increased cardiovascular morbidity and mortality and all-cause mortality in London | European Heart Journal | Oxford Academic (oup.com); Hjortebjerg, D., Anderson, A.M., Christensen, J.S., Ketzel, M., RaaschouNielsen, O., Sunyer, J., Julvez, J., Forns, J. and Sorensen, M. (2015) 'Exposure to Road Traffic Noise and Behavioral Problems in 7-Year-Old Children: A Cohort Study' Environmental Health Perspectives, 124(2): 228-34; and Leiser. C, Hanson. H, Sawyer, K, Steenblik, J, Al-Dulaimi, R, Madsen, T, Gibbins, K, Hotaling, J, Oluseye Ibrahim, Y, VanDerslice, J & Fuller, M (2019) Acute effects of air pollutants on spontaneous pregnancy loss: a case crossover study, Fertility and Sterility, Volume 111, Issue 2, 2019, Pages 341- 347.

[29] Ibid6

physical health and mental wellbeing outcomes. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, albeit the geographic extent of this option limits the potential for this.[30]

The construction activities associated with the option may result in negative impacts for local communities during the construction stage. The construction could have a negative impact on groups who are more vulnerable to noise, vibration, and air quality such as children, older people, disabled people, and pregnant women.[31] However, it is considered that these impacts would be temporary and limited, particularly given the scope of Option AT31.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.2.3 AT33 – Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road

This option provides the opportunity for improved active travel connectivity between Dyce Rail Station and the A947 and the eastern section of Dyce. Introduction of a one-way system on Station Road and adjacent streets provides the opportunity for a contra-flow cycle lane to be adopted. This could increase the safety of cycling by offering alternative routes to busy roads and therefore the attractiveness of cycling for vulnerable and underrepresented groups who currently do not travel actively due to a lack of sufficient facilities, such as women, who are less likely to cycle than men, would be increased.[32]

In addition, despite this option having no direct impact on public transport services and network coverage, the implementation of improved active travel infrastructure may make it easier for people to access rail services in Dyce, especially those on low incomes and without access to a car. Further, women may particularly benefit from improved active travel connections at transport interchanges because they are more likely to make multi-stop journeys by different modes of transport.[33]

An uptake in active travel between Dyce Rail Station and eastern parts of the study area, together with linkages to other active travel networks, provides the opportunity to improve physical health and mental wellbeing outcomes. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, albeit this option is only likely to impact short local journeys and the geographic extent limits the potential for this.

However, the physical constraint imposed by the narrow corridor width would require the retention of the existing 1.5m wide footways. These are considered to provide an absolute minimum acceptable width in line with Roads for All and Inclusive Mobility guidance and should enable a wheelchair user and pedestrian to pass each other.[34,35]

The construction activities associated with the option may result in negative impacts for local communities during the construction stage. The construction could have a negative impact on groups who are more vulnerable to noise, vibration, and air quality such as children, older people, disabled people, and pregnant women.[36] However, it is considered that these impacts would be temporary.

Overall, on balance, this option would be expected to have a **minor positive impact** on this criterion.

[30] Ibid6
[31] Ibid6
[32] Sustrans (2018). “Are we nearly three yet?” Exploring gender and active travel. Available at: https://www.sustrans.org.uk/media/2879/2879.pdf
[33] Sustrans (2018). “Are we nearly three yet?” Exploring gender and active travel. Available at: https://www.sustrans.org.uk/media/2879/2879.pdf
[34] Transport Scotland, Roads for All: Good Practice Guide for Roads (2013) notes that: “In existing constrained environments and where obstacles are unavoidable, an absolute minimum width of 1500 millimetres may be used without the requirement of a Departure from Standard.” https://www.transport.gov.scot/media/43830/roads-for-all-good-practice-guide-for-roads-july-2013.pdf (Section 4.1.10).
[35] Department for Transport, Inclusive Mobility: A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure (2021) notes: “Footways and footpaths should be made as wide as is practicable, but under normal circumstances, a width of 2000mm is the minimum that should be provided, as this allows enough space for two wheelchair users to pass, even if they are using larger electric mobility scooters. If this is not feasible due to physical constraints, then a minimum width of 1500mm could be regarded as the minimum acceptable under most circumstances, as this should enable a wheelchair user and a walker to pass each other.” Whilst Inclusive Mobility is published by the DfT and not directly applicable to Scotland, it can be proposed as best practice. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1044542/inclusive-mobility-a-guide-to-best-practice-on-access-to-pedestrian-and-transport-infrastructure.pdf
[36] Ibid6

11.2.4 AT35a – Implement improvements to develop a mixed-traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae

This option provides the opportunity for improved active travel facilities on the local road network to the west of the A947 along Bankhead Road, Greenburn Road and Millhill Brae. The implementation of active travel improvements provides an opportunity to address mobility issues experienced by protected characteristic groups, such as disabled people and older people, should option AT35a consider widening pavements to facilitate wheelchair use and cycle paths inclusive of adapted bicycles.[37] Moreover, this option provides an opportunity to engender confidence in underrepresented groups. The implementation of active travel measures which utilise quiet residential streets can be preferable to underrepresented groups than cycling on busy main roads. This would provide further benefit to groups with protected characteristics.

Active travel improvements west of the A947 provide the opportunity to improve physical health and mental wellbeing outcomes. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, albeit the geographic extent of this option limits the potential for this.

The construction activities associated with the option may result in negative impacts for local communities during the construction stage. The construction could have a negative impact on groups who are more vulnerable to noise, vibration, and air quality such as children, older people, disabled people, and pregnant women.[38] However, it is considered that these impacts would be minor and temporary.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.2.5 AT41a/b – Improve active travel access to the retail park at the Bucksburn Roundabout

This option provides the opportunity for improved active travel access to the retail park at the Bucksburn Roundabout through the creation of either a shared use facility between the A947 crossing and the retail park or carriageway width reduction to facilitate a segregated two-way cycleway.

Transport policy has been recognised as providing a key role in helping to tackle inequality and improving opportunities.[39] In particular, this option could offer improved access to key services for those on low incomes and without access to a car. This includes improved access to employment and retail services, with an improved active travel network enabling equality of opportunity for groups with protected characteristics who may otherwise be excluded from access.

Either intervention would also promote an opportunity to address mobility issues experienced by protected characteristic groups, such as disabled people and older people, through the provision of cycle paths inclusive of adapted bicycles and widening footways to benefit wheelchair users. However, the level of direct impact will be dependent on the further design work on the proposed active travel links. Moreover, this option provides an opportunity to engender confidence in cycling amongst vulnerable and underrepresented groups who currently do not travel actively due to a lack of sufficient facilities, such as women, who are less likely to cycle than men.[40]

Noise levels generated during the construction phase of measures proposed as part of this option, including the provision of a shared use path or segregated cycleway, have the potential to impact upon nearby noise sensitive receptors (NSRs) including a small number of residential and business properties adjacent to the A947 between Bucksburn Roundabout and the toucan crossing to the north of the Old Meldrum Road Junction. While this could have a negative impact on groups who are more vulnerable to noise, vibration, and air quality such as children, older people, disabled people, and pregnant women, it is considered that these impacts whilst adverse would be temporary. [41]

An uptake in active travel to the retail park provides the opportunity to improve physical health and mental wellbeing outcomes. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, albeit the geographic extent of this option limits the potential for this.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

[37] https://wheelsforwellbeing.org.uk/types-of-cycles/
[38] Ibid
[39] Department for Transport, 2019. Transport and inequality: An evidence review for the Department for Transport, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/953951/Transport_and_inequality_report_document.pdf
[40] Sustrans (2018). "Are we nearly three yet?" Exploring gender and active travel. Available at: https://www.sustrans.org.uk/media/2879/2879.pdf
[41] Ibid

11.2.6 AT43 – Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)

This option would upgrade an existing path between the old and new A947, including widening and providing a bound surface. It additionally considers a proposed new crossing point (to be explored at the next design stage) to improve access between the northbound and southbound bus stops, as well as the widened shared use path being progressed under Option AT58 and would provide linkage to onward active travel opportunities in the study area. These measures provide an opportunity to address mobility issues experienced by protected characteristic groups, especially disabled people and older people.

Moreover, this option provides an opportunity to engender confidence in vulnerable and underrepresented groups, including younger people and vulnerable groups who currently do not travel actively due to a lack of sufficient facilities, such as women, who are less likely to cycle than men.[42] However, the geographic extent of this option limits its overall impact when compared to other options, given the focused nature of the improvement.

An uptake in active travel in this area (including as part of multi-modal journeys involving public transport) provides the opportunity to improve physical health and mental wellbeing outcomes. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, albeit the geographic extent of this option limits the potential for this.

With the geographic extent of this option limiting its overall impact, no significant construction-related impacts would be expected on those with protected characteristics.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.2.7 AT48a – Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North

This option provides the opportunity for improved active travel connectivity along the A947 corridor, between the Bucksburn Roundabout and Riverview Drive Roundabout North. Through the promotion of an overall coherent and connected network afforded by this option, there is an opportunity (through the provision of improved active travel infrastructure) to address mobility issues experienced by protected characteristic groups, such as disabled people and older people. Moreover, this option provides an opportunity to engender confidence in vulnerable and underrepresented groups who currently do not travel actively due to a lack of sufficient facilities, such as women, who are less likely to cycle than men.[43] This would provide further benefit to groups with protected characteristics.

An uptake in active travel on this section of the A947 corridor (supporting the promotion of an overall coherent and connected active travel network) provides the opportunity to improve physical health and mental wellbeing outcomes. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people.

The construction activities associated with this option may result in negative impacts for local communities during the construction stage. The construction could have a negative impact on groups who are more vulnerable to noise, vibration, and air quality such as children, older people, disabled people, and pregnant women.[44] However, it is considered that these impacts would be temporary.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.2.8 AT51 – Implement with-flow segregated cycleway on Old Meldrum Road

This option provides the opportunity for improved active travel connectivity by implementing a with-flow segregated cycleway on Old Meldrum Road. Through the introduction of this infrastructure, there is an opportunity to increase the inclusivity of travel in this part of the study area by making it easier for individuals without a car to travel on Old Meldrum Road and address issues experienced by protected characteristic groups. Moreover, this option provides an opportunity to engender confidence in vulnerable and underrepresented groups who currently do not travel actively due to a lack of sufficient facilities, such as women, who are less likely to cycle than men.[45]

Transport policy has been recognised as providing a key role in helping to tackle inequality and improving

[42] Sustrans (2018). “Are we nearly three yet?” Exploring gender and active travel. Available at: https://www.sustrans.org.uk/media/2879/2879.pdf
[43] Sustrans (2018), “Are we nearly three yet?” Exploring gender and active travel. Available at: https://www.sustrans.org.uk/media/2879/2879.pdf
[44] Ibid6
[45] Sustrans (2018). “Are we nearly three yet?” Exploring gender and active travel. Available at: https://www.sustrans.org.uk/media/2879/2879.pdf

opportunities.[46] In particular, this option could offer improved access to key services such as employment opportunities in the local area via Old Meldrum Road and linkages to other active travel routes. Therefore, the improved active travel network enables equality of opportunity for groups with protected characteristics who may otherwise be excluded from opportunities.

Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, dependent on the level of modal shift that can be achieved. It is anticipated that increased opportunity to travel actively in this part of the study area will have positive impacts on physical health and mental wellbeing.

However, the reduction of on-street parking at the southern end of Old Meldrum Road could affect those who rely on private cars as a mobility aid (disabled people). This group could be disproportionately impacted if they are not able to find suitable parking near services on Old Meldrum Road.

The construction activities associated with this option may result in localised negative impacts on Old Meldrum Road during the construction stage. The construction could have a negative impact on groups who are more vulnerable to noise, vibration, and air quality such as children, older people, disabled people, and pregnant women.[47] However, it is considered that these impacts would be temporary.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.2.9 AT52 – Implement two-way segregated cycleway on Old Meldrum Road

This option provides the opportunity for improved active travel connectivity by implementing a two-way segregated cycleway on Old Meldrum Road. Through the introduction of this infrastructure, there is an opportunity to increase the inclusivity of travel in this part of the study area by making it easier for individuals to travel without a car on Old Meldrum Road and address issues experienced by protected characteristic groups. Moreover, this option provides an opportunity to engender confidence in groups of people, including younger people and vulnerable groups, who currently do not travel actively due to a lack of sufficient facilities.

Transport policy has been recognised as providing a key role in helping to tackle inequality and improving opportunities.[48] In particular, this option could offer improved access to key services such as employment opportunities in the local area via Old Meldrum Road and linkages to other active travel routes. Therefore, the improved active travel network enables equality of opportunity for groups with protected characteristics who may otherwise be excluded from opportunities.

Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, dependent on the level of modal shift that can be achieved. It is anticipated that increased opportunity to travel actively in this part of the study area will have positive impacts on physical health and mental wellbeing.

However, the reduction of on-street parking at the southern end of Old Meldrum Road could affect those who rely on private cars as a mobility aid (disabled people). This group could be disproportionately impacted if they are not able to find suitable parking near services on Old Meldrum Road.

The construction activities associated with this option may result in localised negative impacts on Old Meldrum Road during the construction stage. The construction could have a negative impact on groups who are more vulnerable to noise, vibration, and air quality such as children, older people, disabled people, and pregnant women.[49] However, it is considered that these impacts would be temporary.

Overall, this option would be expected to have a **minor positive impact** on this criterion

11.2.10 AT58 – Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport

Transport policy has been recognised as providing a key role in helping to tackle inequality and improving opportunities.[50] This option provides the opportunity for improved active travel access towards key employment

[46] Department for Transport, 2019. Transport and inequality: An evidence review for the Department for Transport, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/953951/Transport_and_inequality_report_document.pdf
[47] Ibid6
[48] Department for Transport, 2019. Transport and inequality: An evidence review for the Department for Transport, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/953951/Transport_and_inequality_report_document.pdf
[49] Ibid6
[50] Department for Transport, 2019. Transport and inequality: An evidence review for the Department for Transport, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/953951/Transport_and_inequality_report_document.pdf

areas along Dyce Drive and at Kirkhill Industrial Estate. Therefore, the improved active travel network enables equality of opportunity for groups with protected characteristics who may otherwise be excluded from opportunities.

Through the implementation of a shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate, including a reduced speed limit and priority pedestrian crossings on the section of Dyce Drive between Pitmedden Road and the Industrial Estate, there is an opportunity to address mobility issues experienced by protected characteristic groups, especially disabled and elderly people.

Moreover, this option provides an opportunity to engender confidence in vulnerable and underrepresented groups who currently do not travel actively due to a lack of sufficient facilities, such as women, who are less likely to cycle than men.[51]

Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including older people and disabled people, dependent on the level of modal shift that can be achieved. It is also anticipated that increased opportunity to travel actively in this area will have positive impacts on physical health and mental wellbeing where use of the shared use path forms part of active journeys to work along Dyce Drive and at Kirkhill Industrial Estate.

With the location of this option being relatively far from Dyce communities, no significant construction-related impacts would be expected on those with protected characteristics.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.2.11 AT61a – Implement package of active travel measures on Victoria Street

This option provides opportunity to improve accessibility and active travel opportunities in the 'heart' of Dyce, along Victoria Street. Through the implementation of measures such as segregated cycleways and mixed traffic street measures (for example, widening of footways to shared use), there is an opportunity to address mobility issues experienced by protected characteristic groups, such as disabled people and older people. Moreover, this option provides an opportunity to engender confidence in vulnerable and underrepresented groups who currently do not travel actively due to a lack of sufficient facilities, such as women, who are less likely to cycle than men.[52]

This option could offer particular benefits to groups with protected characteristics by enhancing comparative access and transport inclusivity, enabling access to the facilities and amenities that are located along this main route through the centre of Dyce, as well as providing improved connectivity (indirectly) to Dyce Rail Station by active travel. Consideration would need to be given to mitigating any impacts resulting from the sharing of space between vulnerable pedestrians and cyclists.

Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, dependent on the level of modal shift that can be achieved. Increased opportunity to travel actively along Victoria Street will also have positive impacts on physical health and mental wellbeing. This will be further supported by the continued redistribution of vehicular traffic to the A947 route via Riverview Drive, following the reclassification of the Roads Hierarchy.

The construction activities associated with the option may result in negative impacts in the centre of Dyce. The construction could have a negative impact on groups who are more vulnerable to noise, vibration, and air quality such as children, older people, disabled people, and pregnant women.[53] However, it is considered that these impacts would be temporary.

Overall, this option would be expected to have a **moderate positive impact** on this criterion.

11.2.12 AT65 – Implement streetscape improvements and widened pavements along Mugiemoss Road

This option provides the opportunity for streetscape improvements and widened pavements on Mugiemoss Road. The implementation of quiet route' measures would reduce road and personal safety concerns for active travel users, including children. Further, the implementation of active travel quiet routes which utilise quiet residential streets can be preferable to vulnerable and underrepresented cyclists than using busy main roads, such as women, who are less likely to cycle than men.[54]

[51] Sustrans (2018). "Are we nearly three yet?" Exploring gender and active travel. Available at: https://www.sustrans.org.uk/media/2879/2879.pdf
[52] Sustrans (2018). "Are we nearly three yet?" Exploring gender and active travel. Available at: https://www.sustrans.org.uk/media/2879/2879.pdf
[53] Ibid6
[54] Sustrans (2018). "Are we nearly three yet?" Exploring gender and active travel. Available at: https://www.sustrans.org.uk/media/2879/2879.pdf

This option may marginally improve comparative access and transport inclusivity for protected characteristic groups through directly and indirectly increasing access to employment opportunities in the local area, and through linkages to other active travel routes, which are important to many groups with protected characteristics.

An uptake in active travel provides the opportunity to improve physical health and mental wellbeing outcomes. There may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including older people and disabled people, albeit the geographic extent of this option limits the potential for this.

The construction activities associated with this option may result in localised negative impacts on Mugiemoss Road during the construction stage. The construction could have a negative impact on groups who are more vulnerable to noise, vibration, and air quality such as children, older people, disabled people, and pregnant women.[55] However, it is considered that these impacts would be temporary.

Overall, on balance, this option would be expected to have a **minor positive impact** on this criterion.

11.2.13 PT2 – Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor

This option seeks to investigate the timings of existing traffic signals along the A947 corridor to help improve traffic flow through the junctions for all users.

The implementation of bus priority, with associated improvements to bus journey times and journey time reliability, would particularly benefit those without access to a private car who are more reliant on public transport networks, such as those on low incomes, disabled people and elderly people. More reliable and quicker public transport options can help to improve connectivity to key services such as employment, education, healthcare and shopping for these groups.

An uptake in public transport usage may additionally improve physical health and mental wellbeing outcomes if more people are using active modes to access the public transport network, although the impact of this is not expected to be significant. There may also be air quality improvements if the uptake in public transport usage is matched by a reduction in private vehicle use and traffic congestion. Improved health outcomes as a result of better air quality are of particular benefit to those who are more vulnerable to air pollution, including children, older people, pregnant women and disabled people.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.2.14 O16 – Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce

This option provides the opportunity to implement a package of measures to support the implementation of a 20-minute neighbourhood in Dyce. While further assessment of the project area is required, the implementation of measures to support a 20-minute neighbourhood is likely to improve conditions for local active travel and deliver social and community benefits including reduced road and personal safety concerns for active travel users, including those with protected characteristics. This option provides an opportunity to engender confidence in vulnerable and underrepresented groups who currently do not travel actively due to a lack of sufficient facilities, such as women, who are less likely to cycle than men.[56]

Further, women may benefit from the implementation of a 20-minute neighbourhood because they are more likely to make multi-stop and multi-purpose trips, combining travel to work with trips for other purposes such as taking children to school, looking after family members or shopping.[57]

There may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, dependent on the level of modal shift that can be achieved.

It is also anticipated that Option O16 would promote inclusivity by enhancing how connected local residents in Dyce feel with their local community. This could improve mental health and wellbeing particularly for elderly and disabled residents who rely on local social networks and family ties for assistance and interaction.

Overall, this option would be expected to have a **moderate positive impact** on this criterion.

[55] Ibid6
[56] Sustrans (2018). “Are we nearly three yet?” Exploring gender and active travel. Available at: https://www.sustrans.org.uk/media/2879/2879.pdf
[57] Sustrans (2018). “Are we nearly three yet?” Exploring gender and active travel. Available at: https://www.sustrans.org.uk/media/2879/2879.pdf

11.2.15 O25 – Implement access only restrictions for general traffic on Victoria Street

The reprioritisation of the A947 along Riverview Drive supports consideration of the implementation of access only restrictions for general traffic on Victoria Street.

Those who rely on private vehicles as a mobility aid (elderly and disabled people) may be affected if their journey times are increased or if routes are diverted through this option.

However, this option provides an opportunity to engender confidence in vulnerable and underrepresented groups by creating a space within the centre of Dyce which is more attractive for walking, wheeling and cycling. This would support improvement in road user safety.

There may be additional health benefits resulting from improved air quality due to reduced emissions attributed to removing vehicular traffic from the Victoria Street area. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people.

Further assessment is required to better understand the impacts this option would have on residents, local businesses, and key transport service providers[58], particularly where access only restrictions place a constraint on accessibility for those who are not able to travel by active and sustainable modes of transport. Future consultation will need to engage people with protected characteristics to ensure their needs are represented.

Overall, on balance, this option would be expected to have a **minor positive impact** on this criterion, subject to further development.

11.2.16 O26 – Implement one-way restrictions for general traffic on Victoria Street

The reprioritisation of the A947 along Riverview Drive supports consideration of the implementation of one-way restrictions for general traffic on Victoria Street.

The implementation of one-way restrictions for general traffic on Victoria Street would be expected to reduce traffic levels and hence reduce road and personal safety concerns for active travel users, including younger people and vulnerable groups. This would provide an opportunity to engender confidence in vulnerable and underrepresented groups by creating a space within the centre of Dyce which is more attractive for walking, wheeling and cycling.

Further assessment is required to better understand the impacts this option would have on residents, local businesses, and key transport service providers, however, relative to Option O25, vehicular access along Victoria Street would continue to be enabled under this option. Future consultation will need to engage people with protected characteristics to ensure their needs are represented.

Furthermore, there may be additional health benefits resulting from improved air quality due to reduced emissions attributed to reduced levels of general traffic on Victoria Street. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people.

Overall, on balance, this option would be expected to have a **minor positive impact** on this criterion, subject to further development.

[58] It is assumed that public transport (bus) access would continue to be provided as part of this option

11.3 Children's Rights and Wellbeing Impact Assessment (CRWIA)

11.3.1 AT26 – Improve active travel connectivity between the A947 study area and TECA

This option is likely to lead to some benefits for children due to the promotion of improved active travel access across a section of the study area.

There may be health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, albeit the geographic extent of this option limits the potential for this. Further, the habit-forming effect of embedding active travel at a younger age has the potential to have longer-term health benefits, in terms of moving to a more active population.

The construction activities associated with this option may result in negative impacts during the construction stage. This could lead to some negative impacts on groups who are more vulnerable to noise, vibration, and air quality such as children.[59] However, it is considered that these impacts would be temporary and limited, particularly given the scope of Option AT26.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.3.2 AT31 – Improve active travel links between the Riverside Path and housing within Dyce

This option is likely to lead to some benefits for children due to the improved active travel access to the Riverside Path from residential areas. This option could also improve road safety for children and young people in this area – safety is a key issue for children with regards to transport. Child pedestrian casualties in Scotland in 2022 accounted for 32% of all pedestrian casualties of all ages (295 out of 912).[60] In particular, children from deprived areas and certain ethnic groups are more at risk.

There may be health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, albeit the geographic extent of this option limits the potential for this. However, the habit-forming effect of embedding active travel at a younger age has the potential to have longer-term health benefits, in terms of moving to a more active population.

With the focus of this option being on improving links to the Riverside Path, there are unlikely to be any significant impacts on journeys to/from Dyce Academy and Dyce Primary, although Option AT31 will contribute to a more accessible active travel environment as a whole in the part of the study area where the Academy is located.

The construction activities associated with this option may result in negative impacts for local communities during the construction stage. This could lead to some negative impacts on groups who are more vulnerable to noise, vibration, and air quality such as children.[61] However, it is considered that these impacts would be temporary and limited, particularly given the scope of Option AT31.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.3.3 AT33 – Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road

This option is likely to lead to some benefits for children due to the promotion of improved active travel journeys between Dyce Rail Station and the A947 and the eastern section of Dyce. This option could also improve road safety for children and young people in this area – safety is a key issue for children with regards to transport. Child pedestrian casualties in Scotland in 2022 accounted for 32% of all pedestrian casualties of all ages (295

[59] Hjortebjerg, D., Anderson, A.M., Christensen, J.S., Ketzel, M., RaaschouNielsen, O., Sunyer, J., Julvez, J., Forns, J. and Sorensen, M. (2015) 'Exposure to Road Traffic Noise and Behavioral Problems in 7-Year-Old Children: A Cohort Study' Environmental Health Perspectives, 124(2): 228-34

[60] Transport Scotland (October 2023): Reported Road Casualties Scotland 2022. Available at: https://www.transport.gov.scot/media/fpxp1oxz/view-reported-road-casualties-scotland-2022-full-pdf-version-including-datasets.pdf

[61] Hjortebjerg, D., Anderson, A.M., Christensen, J.S., Ketzel, M., RaaschouNielsen, O., Sunyer, J., Julvez, J., Forns, J. and Sorensen, M. (2015) 'Exposure to Road Traffic Noise and Behavioral Problems in 7-Year-Old Children: A Cohort Study' Environmental Health Perspectives, 124(2): 228-34

out of 912).[62] In particular, children from deprived areas and certain ethnic groups are more at risk.

There may be health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, albeit the geographic extent of this option limits the potential for this. However, the habit-forming effect of embedding active travel at a younger age has the potential to have longer-term health benefits, in terms of moving to a more active population.

Active travel to school for pupils in Scotland decreased from 50.4% in 2014 to 47.8% in 2019.[63] Option AT33 could have an indirect positive impact on trips to and from Dyce Primary School as a result of potential increased uptake of cycling to school by pupils.

The construction activities associated with this option may result in negative impacts for local communities during the construction stage. The construction could have a negative impact on groups who are more vulnerable to noise, vibration, and air quality such as children.[64] However, it is considered that these impacts would be temporary.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.3.4 AT35a – Implement improvements to develop a mixed-traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae

This option is likely to result in positive impacts for children due to a reduction in the perceived danger of road accidents and casualties as well as reduced personal road safety concerns as a result of the implementation of the mixed-traffic street measures (which allows for safe, on-road cycling), including on Greenburn Road which acts as one of the main access points for Stoneywood School.

There may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, albeit the geographic extent of this option limits the potential for this. However, the habit-forming effect of embedding active travel at a younger age has the potential to have longer-term health benefits, in terms of moving to a more active population.

The construction activities associated with this option may result in negative impacts for local communities during the construction stage. This could lead to some negative impacts on groups who are more vulnerable to noise, vibration, and air quality such as children.[65] However, it is considered that these impacts would be minor and temporary, particularly given the scope of Option AT35a.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.3.5 AT41a/b – Improve active travel access to the retail park at the Bucksburn Roundabout

This option is likely to lead to some benefits for children due to the promotion of improved active travel access to the retail park. This option could also improve road safety for children and young people in this area – safety is a key issue for children with regards to transport. Child pedestrian casualties in Scotland in 2022 accounted for 32% of all pedestrian casualties of all ages (295 out of 912).[66] In particular, children from deprived areas and certain ethnic groups are more at risk.

There may be health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution,

[62] Transport Scotland (October 2023): Reported Road Casualties Scotland 2022. Available at: https://www.transport.gov.scot/media/fpxp1oxz/view-reported-road-casualties-scotland-2022-full-pdf-version-including-datasets.pdf

[63] Sustrans (2020). Travel to School in Scotland Hands up Scotland Survey 2019. Available at: https://www.sustrans.org.uk/media/6692/hands-up-scotland-survey-2019_national-summary-report.pdf

[64] Hjortebjerg, D., Anderson, A.M., Christensen, J.S., Ketzel, M., RaaschouNielsen, O., Sunyer, J., Julvez, J., Forns, J. and Sorensen, M. (2015) 'Exposure to Road Traffic Noise and Behavioral Problems in 7-Year-Old Children: A Cohort Study' Environmental Health Perspectives, 124(2): 228-34

[65] Hjortebjerg, D., Anderson, A.M., Christensen, J.S., Ketzel, M., RaaschouNielsen, O., Sunyer, J., Julvez, J., Forns, J. and Sorensen, M. (2015) 'Exposure to Road Traffic Noise and Behavioral Problems in 7-Year-Old Children: A Cohort Study' Environmental Health Perspectives, 124(2): 228-34

[66] Transport Scotland (October 2023): Reported Road Casualties Scotland 2022. Available at: https://www.transport.gov.scot/media/fpxp1oxz/view-reported-road-casualties-scotland-2022-full-pdf-version-including-datasets.pdf

including children, albeit the geographic extent of this option limits the potential for this. However, the habit-forming effect of embedding active travel at a younger age has the potential to have longer-term health benefits, in terms of moving to a more active population.

Noise levels generated during the construction phase of measures proposed as part of this option, including the provision of a shared use path or segregated cycleway, have the potential to impact upon nearby noise sensitive receptors (NSRs) including a small number of residential and business properties adjacent to the A947 between Bucksburn Roundabout and the toucan crossing to the north of the Old Meldrum Road Junction. While this could have a negative impact on groups who are more vulnerable to noise, vibration, and air quality such as children, it is considered that these impacts whilst adverse would be temporary.[67]

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.3.6 AT43 – Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)

This option is likely to lead to some benefits for children due to the promotion of improved active travel access in this part of the study area, with added benefit of improving access to, and between, bus stop infrastructure.

However, overall, no significant impacts are expected on this criterion, due to the local scale and targeted nature of these improvements. The geographic extent of this option limits the potential for additional health benefits for children resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles.

Overall, this option would be expected to have a **neutral impact** on this criterion.

11.3.7 AT48a – Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North

This option is likely to lead to some benefits for children due to the promotion of improved active travel access across the study area. This option could improve road safety for children and young people in this area – safety is a key issue for children with regards to transport. Child pedestrian casualties in Scotland in 2022 accounted for 32% of all pedestrian casualties of all ages (295 out of 912).[68] In particular, children from deprived areas and certain ethnic groups are more at risk.

There may be health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children. The habit-forming effect of embedding active travel at a younger age has the potential to have longer-term health benefits, in terms of moving to a more active population.

The construction activities associated with this option may result in negative impacts for local communities during the construction stage. This could lead to some negative impacts on groups who are more vulnerable to noise, vibration, and air quality such as children.[69] However, it is considered that these impacts would be temporary.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.3.8 AT51 – Implement with-flow segregated cycleway on Old Meldrum Road

This option is likely to lead to benefits for children due to the promotion of improved active travel journeys to onward locations such as Dyce. The implementation of segregated cycle facilities would reduce road and personal safety concerns for users, including children. However, the geographic extent of this option limits its overall impact.

There may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, dependent on the level of modal shift that can be achieved. The habit-forming effect of embedding active travel at a younger age has the potential to have longer-term health benefits, in terms of moving to a more active population.

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[67] Hjortebjerg, D., Anderson, A.M., Christensen, J.S., Ketzel, M., RaaschouNielsen, O., Sunyer, J., Julvez, J., Forns, J. and Sorensen, M. (2015) 'Exposure to Road Traffic Noise and Behavioral Problems in 7-Year-Old Children: A Cohort Study' Environmental Health Perspectives, 124(2): 228-34

[68] Transport Scotland (October 2023): Reported Road Casualties Scotland 2022. Available at: https://www.transport.gov.scot/media/fpxp1oxz/view-reported-road-casualties-scotland-2022-full-pdf-version-including-datasets.pdf

[69] Hjortebjerg, D., Anderson, A.M., Christensen, J.S., Ketzel, M., RaaschouNielsen, O., Sunyer, J., Julvez, J., Forns, J. and Sorensen, M. (2015) 'Exposure to Road Traffic Noise and Behavioral Problems in 7-Year-Old Children: A Cohort Study' Environmental Health Perspectives, 124(2): 228-34

The construction activities associated with this option may result in localised negative impacts on Old Meldrum Road during the construction stage. The construction could have a negative impact on groups who are more vulnerable to noise, vibration, and air quality such as children.[70] However, it is considered that these impacts would be temporary.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.3.9 AT52 – Implement two-way segregated cycleway on Old Meldrum Road

This option is likely to lead to benefits for children due to the promotion of improved active travel journeys to onward locations such as Dyce. The implementation of segregated cycle facilities would reduce road and personal safety concerns for users, including children. However, the geographic extent of this option limits its overall impact.

There may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, dependent on the level of modal shift that can be achieved. The habit-forming effect of embedding active travel at a younger age has the potential to have longer-term health benefits, in terms of moving to a more active population.

The construction activities associated with this option may result in localised negative impacts on Old Meldrum Road during the construction stage. The construction could have a negative impact on groups who are more vulnerable to noise, vibration, and air quality such as children.[71] However, it is considered that these impacts would be temporary.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.3.10 AT58 – Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport

The implementation of shared use paths would reduce road and personal safety concerns for active travel users, including children, however with the location of this option being relatively far from Dyce communities, and generally focussing on links to employment areas in Dyce, there are no significant impacts expected on this criterion.

Overall, this option would be expected to have a **neutral impact** on this criterion.

11.3.11 AT61a – Implement package of active travel measures on Victoria Street

This option is likely to lead to benefits for children due to the promotion of improved active travel journeys in the centre of Dyce, with improved user safety promoted by cycling on segregated cycleways.

There may be health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, dependent on the level of modal shift that can be achieved. The habit-forming effect of embedding active travel at a younger age has the potential to have longer-term health benefits, in terms of moving to a more active population. Option AT61a could also have an indirect positive impact on trips to and from Dyce Primary School, which is located close to Victoria Street along Gordon Terrace.

The construction activities associated with the option may result in negative impacts in the centre of Dyce. The construction could have a negative impact on groups who are more vulnerable to noise, vibration and air quality, such as children.[72] However, it is considered that these impacts would be temporary.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

[70] Hjortebjerg, D., Anderson, A.M., Christensen, J.S., Ketzel, M., RaaschouNielsen, O., Sunyer, J., Julvez, J., Forns, J. and Sorensen, M. (2015) 'Exposure to Road Traffic Noise and Behavioral Problems in 7-Year-Old Children: A Cohort Study' Environmental Health Perspectives, 124(2): 228-34

[71] Hjortebjerg, D., Anderson, A.M., Christensen, J.S., Ketzel, M., RaaschouNielsen, O., Sunyer, J., Julvez, J., Forns, J. and Sorensen, M. (2015) 'Exposure to Road Traffic Noise and Behavioral Problems in 7-Year-Old Children: A Cohort Study' Environmental Health Perspectives, 124(2): 228-34

[72] Hjortebjerg, D., Anderson, A.M., Christensen, J.S., Ketzel, M., RaaschouNielsen, O., Sunyer, J., Julvez, J., Forns, J. and Sorensen, M. (2015) 'Exposure to Road Traffic Noise and Behavioral Problems in 7-Year-Old Children: A Cohort Study' Environmental Health Perspectives, 124(2): 228-34

11.3.12 AT65 – Implement streetscape improvements and widened pavements along Mugiemoss Road

This option is likely to lead to some benefits for children due to the improved level of accessibility along Mugiemoss Road. The implementation of quiet route measures would reduce road and personal safety concerns for active travel users, including children. The implementation of active travel quiet routes which utilise quiet residential streets can be preferable to less experienced and vulnerable cyclists than using busy main roads. However, the geographic extent of this option limits its overall impact.

The construction activities associated with this option may result in localised negative impacts on Mugiemoss Road during the construction stage. The construction could have a negative impact on groups who are more vulnerable to noise, vibration, and air quality such as children.[73] However, it is considered that these impacts would be temporary.

Overall, on balance, this option would be expected to have a **neutral impact** on this criterion.

11.3.13 PT2 – Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor

The implementation of bus priority is unlikely to affect journeys to schools in the study area and therefore a negligible impact on children and young people would be expected.

However, whilst the main focus of this option is promoting increased bus usage through bus priority at all traffic signals along the A947, there may be marginal health benefits associated, with, for example, increased walking or cycling to access bus services. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles and reduced congestion. This in turn can make communities more attractive and have benefits on the health and wellbeing of children. However, the scale of these benefits for children and young people is unlikely to be significant.

Overall, this option would be expected to have a **neutral impact** on this criterion.

11.3.14 O16 – Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce

This option is likely to lead to benefits for children due to the promotion of more pleasant, accessible, safe communities, and improved provision for active travel journeys in Dyce. The habit-forming effect of embedding active travel at a younger age has the potential to have longer-term health benefits, in terms of moving to a more active population. It is anticipated that Option O16 would also support increased active travel journeys to and from educational establishments, for example Dyce Primary and Dyce Academy.

There may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, dependent on the level of modal shift that can be achieved.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.3.15 O25 – Implement access only restrictions for general traffic on Victoria Street

This option is likely to lead to some benefits for children by creating a space within the centre of Dyce which is more attractive for walking, wheeling and cycling. This would support improvement in road user safety. Further assessment is required to better understand the impacts this option would have on access to, for example, Dyce Primary School.

There may be additional health benefits resulting from improved air quality due to reduced emissions attributed to removing vehicular traffic from the Victoria Street area. This could benefit those who are more vulnerable to air pollution, including children. Further, the habit-forming effect of embedding active travel at a younger age has the potential to have longer-term health benefits, in terms of moving to a more active population.

Overall, on balance, this option would be expected to have a **minor positive impact** on this criterion, subject to further development.

[73] Hjortebjerg, D., Anderson, A.M., Christensen, J.S., Ketzel, M., RaaschouNielsen, O., Sunyer, J., Julvez, J., Forns, J. and Sorensen, M. (2015) 'Exposure to Road Traffic Noise and Behavioral Problems in 7-Year-Old Children: A Cohort Study' Environmental Health Perspectives, 124(2): 228-34

11.3.16 O26 – Implement one-way restrictions for general traffic on Victoria Street

This option is likely to lead to some benefits for children by creating a space within the centre of Dyce which is more attractive for walking, wheeling and cycling. This would support improvement in road user safety. Further assessment is required to better understand the impacts this option would have on access to, for example, Dyce Primary School – traffic flow analysis would be required to determine the preferred direction of one-way restrictions on Victoria Street based on capacity for entering/exiting.

There may be additional health benefits resulting from improved air quality due to reduced emissions attributed to reduced levels of general traffic on Victoria Street. This could benefit those who are more vulnerable to air pollution, including children. Further, the habit-forming effect of embedding active travel at a younger age has the potential to have longer-term health benefits, in terms of moving to a more active population.

Overall, on balance, this option would be expected to have a **minor positive impact** on this criterion, subject to further development.

11.4 Health Inequalities Impact Assessment (HIIA)

11.4.1 AT26 – Improve active travel connectivity between the A947 study area and TECA

This option provides the opportunity for improved active travel access between the A947 study area and TECA, and key trip attractors to the west, including Aberdeen International Airport. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health, as well as having beneficial impacts on mental health and wellbeing.

Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, albeit the geographic extent of this option limits the potential for this.

This option, through enabling and facilitating active travel, is also anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City – North: Locality Plan 2021-26.[74] Around 27% of men and 35% of women in Scotland do not meet recommended guidelines for physical activity (at least 150 minutes of moderate physical activity, 75 minutes of moderate to vigorous activity, or an equivalent combination between the two per week).[75] 29% of children do not meet the guideline (at least 60 minutes of activity on average per day)[76]. Walking, wheeling and cycling can be one of the easiest ways to incorporate activity into daily routine and reduce health inequality.

With the geographic focus of this option being in the west of the study area, there are unlikely to be any significant direct impacts on access to health and wellbeing facilities. However, the improved active travel facilities associated with this option could promote access to green spaces such as Stoneyton Park and the Former Rowett Institute Trail (TECA Trail), which has been known to improve mental wellbeing.[77]

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.4.2 AT31 – Improve active travel links between the Riverside Path and housing within Dyce

This option provides the opportunity for improved active travel access in the east of the study area between large residential areas in the centre of Dyce and the Riverside Path. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health, as well as having beneficial impacts on mental health and wellbeing.

Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, albeit the geographic extent of this option limits the potential for this.[78] However, overall, it is anticipated that improved accessibility to the Riverside Path from large residential areas will have positive impacts on physical health and mental wellbeing.

[74] Community Planning Aberdeen (2021). Aberdeen City – North: Locality Plan 2021-2026. Available at: Final-Aberdeen-City-Locality-North-1.2.pdf (communityplanningaberdeen.org.uk)
[75] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

[76] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

[77] Pasanen, T. et al (2023). Urban green space and mental health among people living alone: The mediating roles of relational and collective restoration in an 18-country sample. Environmental Research, Volume 232, 116324.
[78] Ibid6

This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City – North: Locality Plan 2021-26.[79] Around 27% of men and 35% of women in Scotland do not meet recommended guidelines for physical activity (at least 150 minutes of moderate physical activity, 75 minutes of moderate to vigorous activity, or an equivalent combination between the two per week).[80] 29% of children do not meet the guideline (at least 60 minutes of activity on average per day)[81]. Walking, wheeling and cycling can be one of the easiest ways to incorporate activity into daily routine and reduce health inequality.

With the focus of this option being on improving links to the Riverside Path, there are unlikely to be any significant direct impacts on access to health and wellbeing facilities. However, through improved accessibility to the Riverside Path, Option AT31 would promote improved access to blue and green spaces around the River Don which has been known to improve mental wellbeing (and, as a result, would indirectly support onward journeys to Seaton Park and the centre of Aberdeen via NCN1).[82]

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.4.3 AT33 – Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road

This option provides the opportunity for improved active travel connectivity between Dyce Rail Station and the A947 and the eastern section of Dyce. An uptake in active travel, especially for short local journeys, could have a big impact on improved physical health and mental wellbeing outcomes. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity, as well as having beneficial impacts on mental health and wellbeing.

Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, albeit the focus on short local journeys and geographic extent of this option limits the potential for this.

This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City – North: Locality Plan 2021-26.[83] Around 27% of men and 35% of women in Scotland do not meet recommended guidelines for physical activity (at least 150 minutes of moderate physical activity, 75 minutes of moderate to vigorous activity, or an equivalent combination between the two per week).[84] 29% of children do not meet the guideline (at least 60 minutes of activity on average per day)[85]. Walking, wheeling and cycling can be one of the easiest ways to incorporate activity into daily routine and reduce health inequality.

With the geographic focus of this option being around Dyce Rail Station and the eastern section of Dyce, there are unlikely to be any significant impacts on access to health and wellbeing facilities, but the option could facilitate access to health and wellbeing infrastructure outwith the study area through improved links to Dyce Rail Station.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.4.4 AT35a – Implement improvements to develop a mixed-traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae

This option provides the opportunity for improved active travel facilities on the local road network to the west of the A947 along Bankhead Road, Greenburn Road and Millhill Brae. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health, as well as having beneficial impacts on mental health and wellbeing.

[79] Community Planning Aberdeen (2021). Aberdeen City – North: Locality Plan 2021-2026. Available at: Final-Aberdeen-City-Locality-North-1.2.pdf (communityplanningaberdeen.org.uk)
[80] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

[81] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

[82] Pasanen, T. et al (2023). Urban green space and mental health among people living alone: The mediating roles of relational and collective restoration in an 18-country sample. Environmental Research, Volume 232, 116324.
[83] Community Planning Aberdeen (2021). Aberdeen City – North: Locality Plan 2021-2026. Available at: Final-Aberdeen-City-Locality-North-1.2.pdf (communityplanningaberdeen.org.uk)
[84] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

[85] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, albeit the geographic extent of this option limits the potential for this.

This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City – North: Locality Plan 2021-26.[86] Around 27% of men and 35% of women in Scotland do not meet recommended guidelines for physical activity (at least 150 minutes of moderate physical activity, 75 minutes of moderate to vigorous activity, or an equivalent combination between the two per week).[87] 29% of children do not meet the guideline (at least 60 minutes of activity on average per day)[88]. Walking, wheeling and cycling can be one of the easiest ways to incorporate activity into daily routine and reduce health inequality.

With the geographic focus of this option being in the west of the study area, there are unlikely to be any significant impacts on access to health and wellbeing facilities. However, the improved active travel facilities associated with this option would promote access to green spaces, such as Stoneyton Park and green spaces to the west of Greenburn Road, which has been known to improve mental wellbeing.[89]

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.4.5 AT41a/b – Improve active travel access to the retail park at the Bucksburn Roundabout

This option provides the opportunity for improved active travel access to the retail park at the Bucksburn Roundabout. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health, as well as having beneficial impacts on mental health and wellbeing.

Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, albeit the geographic extent of this option limits the potential for this.

This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City – North: Locality Plan 2021-26.[90] Around 27% of men and 35% of women in Scotland do not meet recommended guidelines for physical activity (at least 150 minutes of moderate physical activity, 75 minutes of moderate to vigorous activity, or an equivalent combination between the two per week).[91] 29% of children do not meet the guideline (at least 60 minutes of activity on average per day)[92]. Walking, wheeling and cycling can be one of the easiest ways to incorporate activity into daily routine and reduce health inequality.

There may be some indirect benefits associated with access to health and wellbeing facilities such as the Inverurie Road Clinic. Improved access to blue and green spaces (for example, the River Don) could also have a **minor positive impact** on health and wellbeing, particularly for employees of the retail park at the Bucksburn Roundabout.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.4.6 AT43 – Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)

This option provides the opportunity for improved active travel access between the old and new A947 and provides linkage to the wider active travel network. Access to active travel and transport systems that encourage active living (including as part of multi-modal journeys involving public transport) and regular physical activity is an important factor in combatting obesity and improving physical health, as well as having beneficial impacts on mental health and wellbeing.

[86] Community Planning Aberdeen (2021). Aberdeen City – North: Locality Plan 2021-2026. Available at: Final-Aberdeen-City-Locality-North-1.2.pdf (communityplanningaberdeen.org.uk)
[87] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

[88] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

[89] Pasanen, T. et al (2023). Urban green space and mental health among people living alone: The mediating roles of relational and collective restoration in an 18-country sample. Environmental Research, Volume 232, 116324.
[90] Community Planning Aberdeen (2021). Aberdeen City – North: Locality Plan 2021-2026. Available at: Final-Aberdeen-City-Locality-North-1.2.pdf (communityplanningaberdeen.org.uk)
[91] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

[92] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, albeit the geographic extent of this option limits the potential for this.

This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City – North: Locality Plan 2021-26.[93] Around 27% of men and 35% of women in Scotland do not meet recommended guidelines for physical activity (at least 150 minutes of moderate physical activity, 75 minutes of moderate to vigorous activity, or an equivalent combination between the two per week).[94] 29% of children do not meet the guideline (at least 60 minutes of activity on average per day)[95]. Walking, wheeling and cycling can be one of the easiest ways to incorporate activity into daily routine and reduce health inequality.

With the geographic extent of this option limiting its overall impact, there are unlikely to be any significant impacts on access to health and wellbeing facilities attributable to this option in isolation.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.4.7 AT48a – Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North

This option provides the opportunity for improved active travel connectivity along the A947 corridor, between the Bucksburn Roundabout and Riverview Drive Roundabout North. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. The increased opportunity to travel actively on this section of the A947 corridor (supporting the promotion of an overall coherent and connected active travel network) will also have beneficial impacts on mental health and wellbeing.

Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people.

This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City – North: Locality Plan 2021-26.[96] Around 27% of men and 35% of women in Scotland do not meet recommended guidelines for physical activity (at least 150 minutes of moderate physical activity, 75 minutes of moderate to vigorous activity, or an equivalent combination between the two per week).[97] 29% of children do not meet the guideline (at least 60 minutes of activity on average per day)[98]. Walking, wheeling and cycling can be one of the easiest ways to incorporate activity into daily routine and reduce health inequality.

It is anticipated that this option could contribute to improved access to health and wellbeing facilities for those walking, wheeling or cycling, such as to GP surgeries and health centres in the local area (e.g. Gilbert Road Medical Group and the Inverurie Road Clinic), however the option on its own would not provide improved access directly to these facilities.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.4.8 AT51 – Implement with-flow segregated cycleway on Old Meldrum Road

This option provides the opportunity for improved active travel connectivity by implementing a with-flow segregated cycleway on Old Meldrum Road. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. There may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, dependent on the level of modal shift that can be achieved.

This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims

[93] Community Planning Aberdeen (2021). Aberdeen City – North: Locality Plan 2021-2026. Available at: Final-Aberdeen-City-Locality-North-1.2.pdf (communityplanningaberdeen.org.uk)
[94] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

[95] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

[96] Community Planning Aberdeen (2021). Aberdeen City – North: Locality Plan 2021-2026. Available at: Final-Aberdeen-City-Locality-North-1.2.pdf (communityplanningaberdeen.org.uk)
[97] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

[98] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

for the Aberdeen North area, as set out in the Aberdeen City – North: Locality Plan 2021-26[99] Around 27% of men and 35% of women in Scotland do not meet recommended guidelines for physical activity (at least 150 minutes of moderate physical activity, 75 minutes of moderate to vigorous activity, or an equivalent combination between the two per week).[100] 29% of children do not meet the guideline (at least 60 minutes of activity on average per day)[101]. Walking, wheeling and cycling can be one of the easiest ways to incorporate activity into daily routine and reduce health inequality.

There may be some indirect benefits associated with access to health and wellbeing facilities such as the Gilbert Road Medical Group, which is located to the west of Old Meldrum Road. Improved access to green spaces, for example to the Auchmill Nature Walk on the north side of Auchmill Road, could also have a **minor positive impact** on health and wellbeing. There could be wider benefits on access to green space to the south of Auchmill Road opposite the Old Meldrum Road Junction outwith the study area.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.4.9 AT52 – Implement two-way segregated cycleway on Old Meldrum Road

This option provides the opportunity for improved active travel connectivity by implementing a two-way segregated cycleway on Old Meldrum Road. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. There may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, dependent on the level of modal shift that can be achieved.

This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City – North: Locality Plan 2021-26.[102] Around 27% of men and 35% of women in Scotland do not meet recommended guidelines for physical activity (at least 150 minutes of moderate physical activity, 75 minutes of moderate to vigorous activity, or an equivalent combination between the two per week).[103] 29% of children do not meet the guideline (at least 60 minutes of activity on average per day)[104]. Walking, wheeling and cycling can be one of the easiest ways to incorporate activity into daily routine and reduce health inequality.

There may be some indirect benefits associated with access to health and wellbeing facilities such as the Gilbert Road Medical Group, which is located to the west of Old Meldrum Road. Improved access to green spaces, for example to the Auchmill Nature Walk on the north side of Auchmill Road, could also have a **minor positive impact** on health and wellbeing. There could also be wider benefits on access to green space to the south of Auchmill Road opposite the Old Meldrum Road Junction outwith the study area.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.4.10 AT58 – Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport

It is anticipated that increased opportunity to travel actively in this area will have positive impacts on physical health and mental wellbeing where use of the shared use path forms part of active journeys to work along Dyce Drive and at Kirkhill Industrial Estate. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. Furthermore, there may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including older people and disabled people, dependent on the level of modal shift that can be achieved.

This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City – North: Locality Plan 2021-26.[105] Around 27% of men and 35% of women in Scotland do not meet recommended guidelines for physical activity (at least 150

[99] Community Planning Aberdeen (2021). Aberdeen City – North: Locality Plan 2021-2026. Available at: Final-Aberdeen-City-Locality-North-1.2.pdf (communityplanningaberdeen.org.uk)
[100] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/
[101] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/
[102] Community Planning Aberdeen (2021). Aberdeen City – North: Locality Plan 2021-2026. Available at: Final-Aberdeen-City-Locality-North-1.2.pdf (communityplanningaberdeen.org.uk)
[103] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/
[104] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/
[105] Community Planning Aberdeen (2021). Aberdeen City – North: Locality Plan 2021-2026. Available at: Final-Aberdeen-City-Locality-North-1.2.pdf (communityplanningaberdeen.org.uk)

minutes of moderate physical activity, 75 minutes of moderate to vigorous activity, or an equivalent combination between the two per week).[106] 29% of children do not meet the guideline (at least 60 minutes of activity on average per day).[107] Walking, wheeling and cycling can be one of the easiest ways to incorporate activity into daily routine and reduce health inequality.

With the location of this option being relatively far from Dyce and its associated facilities and amenities, there are unlikely to be any significant impacts on access to health and wellbeing facilities.

This option could indirectly improve access to blue and green spaces in the vicinity of the River Don, which could have a **minor positive impact** on health and wellbeing, particularly for employees of the business units located adjacent to Dyce Road and within Kirkhill Industrial Estate, as well as facilitating trips between Kirkhill Industrial Estate and the Formartine & Buchan Way.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.4.11 AT61a – Implement package of active travel measures on Victoria Street

This option provides opportunity to improve accessibility and active travel opportunities in the 'heart' of Dyce, along Victoria Street. There may be health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, dependent on the level of modal shift that can be achieved. Increased opportunity to travel actively along Victoria Street will have positive impacts on physical health and mental wellbeing. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. This will be further supported by the continued redistribution of vehicular traffic to the A947 route via Riverview Drive, following the reclassification of the Roads Hierarchy.

This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City – North: Locality Plan 2021-26.[108] Around 27% of men and 35% of women in Scotland do not meet recommended guidelines for physical activity (at least 150 minutes of moderate physical activity, 75 minutes of moderate to vigorous activity, or an equivalent combination between the two per week).[109] 29% of children do not meet the guideline (at least 60 minutes of activity on average per day).[110] Walking, wheeling and cycling can be one of the easiest ways to incorporate activity into daily routine and reduce health inequality.

This option would be expected to improve access for those walking, wheeling or cycling to GP surgeries and health centres in the centre of Dyce (for example New Dyce Medical Practice) for those living in proximity to Victoria Street, and indirectly via improved active travel links within relatively close proximity to Dyce Rail Station for onward links to facilities in the wider area.

This option could also improve access to green spaces, for example Dyce Boys & Girls Club, Dyce Bowling Club and play parks (and to a lesser extent, Central Park, located to the east of the Victoria Street area), which could have a positive impact on health and wellbeing, particularly for local residents and employees of businesses located along Victoria Street.

Overall, this option would be expected to have a **moderate positive impact** on this criterion.

11.4.12 AT65 – Implement streetscape improvements and widened pavements along Mugiemoss Road

This option provides the opportunity for streetscape improvements and widened pavements on Mugiemoss Road. An uptake in active travel provides the opportunity to improve physical health and mental wellbeing outcomes. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. There may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including older people and disabled people, albeit the geographic extent of this option limits the potential for this.

This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims

[106] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/
[107] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/
[108] Community Planning Aberdeen (2021). Aberdeen City – North: Locality Plan 2021-2026. Available at: Final-Aberdeen-City-Locality-North-1.2.pdf (communityplanningaberdeen.org.uk)
[109] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/
[110] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

for the Aberdeen North area, as set out in the Aberdeen City – North: Locality Plan 2021-26.[111] Around 27% of men and 35% of women in Scotland do not meet recommended guidelines for physical activity (at least 150 minutes of moderate physical activity, 75 minutes of moderate to vigorous activity, or an equivalent combination between the two per week).[112] 29% of children do not meet the guideline (at least 60 minutes of activity on average per day).[113] Walking, wheeling and cycling can be one of the easiest ways to incorporate activity into daily routine and reduce health inequality.

It is anticipated that this option could contribute to improved access to health and wellbeing facilities for those walking, wheeling or cycling, such as to GP surgeries and health centres in the local area, however the option on its own would not provide improved access directly to these facilities.

Improved access to green and blue spaces (for example paths and trails alongside the River Don) could also have a **minor positive impact** on health and wellbeing. However, with the geographic extent of this option limiting its overall impact, there are unlikely to be any significant impacts on access to health and wellbeing facilities.

Overall, on balance, this option would be expected to have a **minor positive impact** on this criterion.

11.4.13 PT2 – Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor

Whilst the main focus of this option is on promoting bus usage through bus priority at all traffic signals along the A947, there may be marginal health benefits associated, with, for example, increased walking or cycling to access bus services. Furthermore, evidence shows that car commuters are more likely to suffer from strain and lack of concentration in comparison to those who use public transport. This is due to increased physical activity from walking, wheeling, or cycling to access public transport services, mental health benefits from relaxing, reading or socialising whilst riding on the service, and an increased level of social connection associated with travelling alongside other users of the service. However, the impact of this is not expected to be significant.

There may be additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles and reduced congestion through junctions for all users. This in turn can make communities more attractive and have associated benefits on health and wellbeing for those more vulnerable to air pollution, including children, older people, pregnant women and disabled people.[114] Changes to air quality would vary along the road network depending on traffic flows and would be dependent on the level of modal shift that is achieved. Further detailed assessment would be required to calculate and model local air quality emissions alongside traffic flow data.

Improved bus journey times could facilitate better access to health and wellbeing facilities for those travelling by bus, especially those without access to any other means of travel. This could also potentially support onward connections to health and wellbeing infrastructure outwith the study area.

Improved access to blue spaces (for example the River Don) and green spaces (for example paths and trails alongside the River Don, Ian Mair Park, Dyce Boys & Girls Club, Dyce Bowling Club and play parks) could also have a positive impact on health and wellbeing, particularly for local residents and employees of businesses located along the corridor.

At this stage, on balance, this option would be expected to have an overall **minor positive impact** on this criterion.

11.4.14 O16 – Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce

This option is likely to lead to benefits for residents of Dyce due to the promotion of improved active travel environments as a result of implementing 20-minute neighbourhoods. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health. There may additional health benefits resulting from improved air quality in the area due to reduced emissions attributed to modal shift away from private vehicles. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people, dependent on the level of modal shift that can be achieved.

This option, through enabling and facilitating active travel, is also anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City – North: Locality Plan 2021-26.[115] Around 27%

[111] Community Planning Aberdeen (2021). Aberdeen City – North: Locality Plan 2021-2026. Available at: Final-Aberdeen-City-Locality-North-1.2.pdf (communityplanningaberdeen.org.uk)
[112] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/
[113] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/
[114] Ibid6
[115] Community Planning Aberdeen (2021). Aberdeen City – North: Locality Plan 2021-2026. Available at: Final-Aberdeen-City-Locality-North-1.2.pdf (communityplanningaberdeen.org.uk)

of men and 35% of women in Scotland do not meet recommended guidelines for physical activity (at least 150 minutes of moderate physical activity, 75 minutes of moderate to vigorous activity, or an equivalent combination between the two per week).[116] 29% of children do not meet the guideline (at least 60 minutes of activity on average per day).[117] Walking, wheeling and cycling can be one of the easiest ways to incorporate activity into daily routine and reduce health inequality.

It is also anticipated that Option O16 would promote inclusivity by enhancing how connected local residents in Dyce feel with their local community. Improved public realm allows for people to gather and socialise and studies have linked the quality of public spaces to people's perceptions of attractiveness of an area, contributing towards their quality of life. By creating more pleasant, accessible, safe communities, this option would help realise these outcomes.

It is anticipated that this option would improve direct access to health and wellbeing facilities, such as New Dyce Medical Practice, for those walking, wheeling and cycling, and indirectly via improved active travel links to transport stops and hubs (for example Dyce Rail Station), for onward links to facilities in the wider area.

This option could also improve access to blue and green spaces, for example paths and trails alongside the River Don and to a range of recreational spaces across the study area, which could have a positive impact on health and wellbeing, particularly for local residents and employees of businesses within Dyce.

Overall, this option would be expected to have a **moderate positive impact** on this criterion.

11.4.15 O25 – Implement access only restrictions for general traffic on Victoria Street

This option is likely to have positive impacts on health and wellbeing, by creating a space within the centre of Dyce which is more attractive to those walking, wheeling and cycling, due to the removal of vehicular traffic. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health.

Furthermore, there may be additional health benefits resulting from improved air quality due to reduced emissions attributed to removing vehicular traffic from the Victoria Street area. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people.

This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City – North: Locality Plan 2021-26.[118] Around 27% of men and 35% of women in Scotland do not meet recommended guidelines for physical activity (at least 150 minutes of moderate physical activity, 75 minutes of moderate to vigorous activity, or an equivalent combination between the two per week).[119] 29% of children do not meet the guideline (at least 60 minutes of activity on average per day).[120] Walking, wheeling and cycling can be one of the easiest ways to incorporate activity into daily routine and reduce health inequality.

Further assessment is required to better understand the impacts this option would have on access to health and wellbeing facilities (including New Dyce Medical Practice) and green spaces (for example Dyce Boys & Girls Club, Dyce Bowling Club and play parks (and to a lesser extent, Central Park, located to the east of the Victoria Street area)).

Overall, on balance, this option would be expected to have a **minor positive impact** on this criterion. This should be kept under review as designs are developed, particularly in terms of the impact this option could have on access to health and wellbeing facilities and blue and green spaces.

11.4.16 O26 – Implement one-way restrictions for general traffic on Victoria Street

This option is likely to have positive impacts on health and wellbeing, by creating a space within the centre of Dyce which is more attractive to those walking, wheeling and cycling. Access to active travel and transport systems that encourage active living and regular physical activity is an important factor in combatting obesity and improving physical health.

[116] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/
[117] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/
[118] Community Planning Aberdeen (2021). Aberdeen City – North: Locality Plan 2021-2026. Available at: Final-Aberdeen-City-Locality-North-1.2.pdf (communityplanningaberdeen.org.uk)
[119] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/
[120] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/

There may be additional health benefits resulting from improved air quality due to reduced emissions attributed to reduced levels of general traffic on Victoria Street. This could benefit those who are more vulnerable to air pollution, including children, older people and disabled people.

This option, through enabling and facilitating active travel, is anticipated to contribute to the Physical Health aims for the Aberdeen North area, as set out in the Aberdeen City – North: Locality Plan 2021-26.[121] Around 27% of men and 35% of women in Scotland do not meet recommended guidelines for physical activity (at least 150 minutes of moderate physical activity, 75 minutes of moderate to vigorous activity, or an equivalent combination between the two per week).[122] 29% of children do not meet the guideline (at least 60 minutes of activity on average per day).[123] Walking, wheeling and cycling can be one of the easiest ways to incorporate activity into daily routine and reduce health inequality.

Further assessment is required to better understand the impacts this option would have on access to health and wellbeing facilities (including New Dyce Medical Practice) and green spaces (for example Dyce Boys & Girls Club, Dyce Bowling Club and play parks (and to a lesser extent, Central Park, located to the east of the Victoria Street area)), however, relative to Option O25, vehicular access along Victoria Street will continue to be enabled under this option. Traffic flow analysis would be required to determine the preferred direction of one-way restrictions on Victoria Street based on capacity for entering/exiting.

Overall, on balance, this option would be expected to have a **minor positive impact** on this criterion, subject to further development.

11.5 Fairer Scotland Duty Assessment (FSDA)

11.5.1 AT26 – Improve active travel connectivity between the A947 study area and TECA

This option could provide a beneficial impact in tackling inequalities experienced by socio-economically disadvantaged groups. It could help to support reduced social isolation, improved health and wellbeing and deliver consequential positive impacts on improving active travel access between the A947 study area and TECA, and key trip attractors to the west, including Aberdeen International Airport.

Transport is seen as an essential component for low-income families to access essential services, such as education, employment and childcare services as a means of escaping poverty, as well as supporting their general wellbeing.[124] Transport often represents a significant cost to those that carry out low-paid, low-skilled or 'atypical' work that involves irregular shifts or hours and has been cited as unmanageable for families, frequently causing anxiety. Therefore, the provision of an affordable active travel network could positively impact socio-economically disadvantaged groups who could otherwise be excluded from opportunities.[125]

There is one data zone in the study area which is ranked within the fourth lowest Scottish Index of Multiple Deprivation (SIMD) decile according to the 2020 figures. This is concentrated in the Bankhead area immediately east of TECA. The measures included within this option may enable this area to be better served by improved active travel provision. This could improve accessibility to leisure activities (e.g. events at TECA) for those most in need.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.5.2 AT31 – Improve active travel links between the Riverside Path and housing within Dyce

A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including data zones at high risk of transport poverty within the vicinity of this option around the northern section of Riverview Drive. Improved accessibility to the Riverside Path from residential areas could provide a beneficial impact in tackling inequality experienced by socio-economically disadvantaged groups. As a result, the option can help in supporting reduced social isolation, improved health and wellbeing and consequential positive impacts on improving accessibility between where people live in Dyce and recreational assets such as the Riverside Path.

Overall, however, considering the scale of impact and recognising that this option formalises an existing, albeit

[121] Community Planning Aberdeen (2021). Aberdeen City – North: Locality Plan 2021-2026. Available at: Final-Aberdeen-City-Locality-North-1.2.pdf (communityplanningaberdeen.org.uk)
[122] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/
[123] Scottish Health Survey, 2021, https://www.gov.scot/publications/scottish-health-survey-2021-volume-1-main-report/pages/11/
[124] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf
[125] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf

informal, active travel desire line and does not provide new linkage, this option would be expected to have a **neutral impact** on this criterion.

11.5.3 AT33 – Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road

A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including within the vicinity of this option, with data zones at high risk of transport poverty towards the north of Victoria Street and medium risk of transport poverty on either side of Station Road. Improved active travel links supporting enhanced connections between Dyce Rail Station and eastern areas of Dyce along Station Road could provide a beneficial impact in tackling inequality experienced by socio-economically disadvantaged groups. The option could help in supporting reduced social isolation, improved health and wellbeing and consequential positive impacts on improving access to Dyce Rail Station for all users.

Transport is seen as an essential component for low-income families to access essential services, such as education, employment and childcare services as a means of escaping poverty, as well as supporting their general wellbeing.[126] Transport often represents a significant cost to those that carry out low-paid, low-skilled or 'atypical' work that involves irregular shifts or hours and has been cited as unmanageable for families, frequently causing anxiety. Therefore, the provision of a safe and affordable active travel network linking to the local public transport network at Dyce Rail Station could positively impact socio-economically disadvantaged groups who could otherwise be excluded from opportunities.[127]

Overall, considering the scale of impact, this option would be expected to have a **minor positive impact** on this criterion.

11.5.4 AT35a – Implement improvements to develop a mixed-traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae

Improved active travel facilities supporting improved active travel accessibility in the west of the study area could provide a beneficial impact in tackling inequality experienced by socio-economically disadvantaged groups. As a result, the option can help in supporting reduced social isolation and improved health and wellbeing.

Transport is seen as an essential component for low-income families to access essential services, such as education, employment and childcare services as a means of escaping poverty, as well as supporting their general wellbeing.[128] Transport often represents a significant cost to those that carry out low-paid, low-skilled or 'atypical' work that involves irregular shifts or hours and has been cited as unmanageable for families, frequently causing anxiety. Therefore, the provision of a safe and affordable active travel network could positively impact socio-economically disadvantaged groups who could otherwise be excluded from opportunities.[129]

There is one data zone in the study area which is ranked within the fourth lowest Scottish Index of Multiple Deprivation (SIMD) decile according to the 2020 figures. This is concentrated in the Bankhead area immediately east of TECA. The measures included within this option may enable this area to be better served by improved active travel provision.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.5.5 AT41a/b – Improve active travel access to the retail park at the Bucksburn Roundabout

Improved active travel facilities supporting improved connectivity to the retail park could provide a beneficial impact in tackling inequality experienced by socio-economically disadvantaged groups. Transport is seen as an essential component for low-income families to access essential services and employment as a means of escaping poverty, as well as supporting their general wellbeing.[130] As a result, the option can help in supporting reduced social isolation, improved health and wellbeing and consequential positive impacts on improving access to this key destination.

[126] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf
[127] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf
[128] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf
[129] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf
[130] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf

Access to transport is shaped by three key factors: affordability, accessibility, and individual household circumstances. Transport often represents a significant cost to those that carry out low-paid, low-skilled or 'atypical' work that involves irregular shifts or hours and has been cited as unmanageable for families, frequently causing anxiety. Therefore, the provision of an affordable active travel network could positively impact socio-economically disadvantaged groups who could otherwise be excluded from opportunities.[131]

There is one data zone in the study area which is ranked within the fourth lowest Scottish Index of Multiple Deprivation (SIMD) decile according to the 2020 figures. This is concentrated in the Bankhead area immediately east of TECA. The measures included within this option may enable this area to be better served by improved active travel provision. This could improve accessibility to key amenities at the retail park for those most in need.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.5.6 AT43 – Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)

A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including within the vicinity of this option, with data zones at high risk of transport poverty on either side of the A947 at this location in the study area. This option could provide a beneficial impact in tackling inequality experienced by socio-economically disadvantaged groups, through improved active travel links and linkage between the northbound and southbound bus stops in this location, as well as the widened shared use path being progressed under Option AT58. As a result, the option can help in supporting reduced social isolation and improved health and wellbeing.

However, overall, considering the scale of impact this option would be expected to have a **minor positive impact** on this criterion.

11.5.7 AT48a – Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North

This option could provide a beneficial impact in tackling inequality experienced by socio-economically disadvantaged groups, with improved active travel facilities supporting the promotion of an overall coherent and connected active travel network along the A947 corridor. As a result, the option can help in supporting reduced social isolation, improved health and wellbeing and consequential positive impacts on improving active travel access on the study corridor.

Transport is seen as an essential component for low-income families to access essential services, such as education, employment and childcare services as a means of escaping poverty, as well as supporting their general wellbeing.[132] Transport often represents a significant cost to those that carry out low-paid, low-skilled or 'atypical' work that involves irregular shifts or hours and has been cited as unmanageable for families, frequently causing anxiety. Therefore, the provision of a safe and affordable active travel network could positively impact socio-economically disadvantaged groups who could otherwise be excluded from opportunities.[133]

There is one data zone in the study area which is ranked within the fourth lowest Scottish Index of Multiple Deprivation (SIMD) decile according to the 2020 figures. This is concentrated in the Bankhead area immediately east of TECA. The measures included within this option may enable this area to be better served by improved active travel provision.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.5.8 AT51 – Implement with-flow segregated cycleway on Old Meldrum Road

This option could provide a beneficial impact in tackling inequality experienced by socio-economically disadvantaged groups, through improved active travel links. As a result, the option can help in supporting reduced social isolation and improved health and wellbeing.

Transport is seen as an essential component for low-income families to access essential services, such as education, employment and childcare services as a means of escaping poverty, as well as supporting their general wellbeing.[134] A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, although data zones in the vicinity of this option are generally identified to

[131] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf
[132] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf
[133] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf
[134] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf

be at low risk of transport poverty. Therefore, while the provision of an affordable active travel network could positively impact socio-economically disadvantaged groups who could otherwise be excluded from opportunities, the level of impact is dependent on the scale of transport poverty in the local area.[135]

Overall, considering the scale of impact, this option would be expected to have a **neutral impact** on this criterion.

11.5.9 AT52 – Implement two-way segregated cycleway on Old Meldrum Road

This option could provide a beneficial impact in tackling inequality experienced by socio-economically disadvantaged groups, through improved active travel links. As a result, the option can help in supporting reduced social isolation and improved health and wellbeing.

Transport is seen as an essential component for low-income families to access essential services, such as education, employment and childcare services as a means of escaping poverty, as well as supporting their general wellbeing.[136] A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, although data zones in the vicinity of this option are generally identified to be at low risk of transport poverty. Therefore, while the provision of an affordable active travel network could positively impact socio-economically disadvantaged groups who could otherwise be excluded from opportunities, the level of impact is dependent on the scale of transport poverty in the local area.[137]

Overall, considering the scale of impact, this option would be expected to have a **neutral impact** on this criterion.

11.5.10 AT58 – Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport

This option could provide a beneficial impact in tackling inequality experienced by socio-economically disadvantaged groups, through improved active travel links. As a result, the option can help in supporting reduced social isolation and improved health and wellbeing through access to employment.

Transport is seen as an essential component for low-income families to access essential services, such as education, employment and childcare services as a means of escaping poverty, as well as supporting their general wellbeing.[138] A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including within the vicinity of this option, with data zones identified to be at high risk of transport poverty in and around Dyce Drive. This option would be anticipated to provide improved active travel provision for trips on Dyce Drive between the A947 and Kirkhill Industrial Estate, as an alternative to motorised transport.

Overall, however, considering the scale of impact, this option would be expected to have a **neutral impact** on this criterion.

11.5.11 AT61a – Implement package of active travel measures on Victoria Street

This option could provide a beneficial impact in tackling inequality experienced by socio-economically disadvantaged groups, through improved active travel links. As a result, the option can help in supporting reduced social isolation and improved health and wellbeing.

Transport is seen as an essential component for low-income families to access essential services, such as education, employment and childcare services as a means of escaping poverty, as well as supporting their general wellbeing.[139] A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including within the vicinity of this option, with data zones identified to be at medium risk of transport poverty on either side of Victoria Street.

This option includes the primary residential and commercial section of Victoria Street and would be anticipated improve active travel provision for short- to medium-distance trips to leisure, education and employment opportunities in the local area. This could particularly impact those without access to any other means of transport and who would otherwise be unable to access key services, as an alternative to motorised transport.

[135] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf
[136] Transport Scotland, 2021, Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf
[137] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf
[138] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf
[139] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf

Overall, considering the function of Victoria Street as the 'heart' of Dyce, this option would be expected to have a **minor positive impact** on this criterion.

11.5.12 AT65 – Implement streetscape improvements and widened pavements along Mugiemoss Road

A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, although data zones within the vicinity of this option are generally identified to be at low risk of transport poverty. This option could provide a beneficial impact in tackling inequality experienced by socio-economically disadvantaged groups, with improved accessibility along Mugiemoss Road. As a result, the option, to a certain extent, can help in supporting reduced social isolation and improved health and wellbeing.

Overall, considering the scale of impact, this option would be expected to have a **neutral impact** on this criterion.

11.5.13 PT2 – Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor

This option could provide a beneficial impact in tackling inequality experienced by socio-economically disadvantaged groups, with the outcome of the traffic signal review potentially helping to implement bus priority. As a result, the option can help in supporting reduced social isolation through enabling a greater number of people to access public transport.

Transport is seen as an essential component for low-income families to access essential services, such as education, employment and childcare services as a means of escaping poverty, as well as supporting their general wellbeing.[140] A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty. This option would be anticipated to improve bus journey times and journey time reliability for short-to medium-distance trips to leisure, education and employment opportunities in the A947 study area, particularly for those without access to any other means of transport and who would otherwise be unable to access key services. This option provides linkage with the primary residential and commercial section of Dyce, in addition to the residential areas of Bankhead and Stoneywood. However, it does not provide any new transport services or increased network provision.

Overall, this option would be expected to have a **minor positive impact** on this criterion.

11.5.14 O16 – Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce

This option could provide a beneficial impact in tackling inequality experienced by socio-economically disadvantaged groups. Transport is seen as an essential component for low-income families to access essential services, such as education, employment and childcare services as a means of escaping poverty, as well as supporting their general wellbeing.[141] This option could help in supporting reduced social isolation and improved health and wellbeing.

Access to transport is shaped by three key factors: affordability, accessibility, and individual household circumstances. Transport often represents a significant cost to those that carry out low-paid, low-skilled or 'atypical' work that involves irregular shifts or hours and has been cited as unmanageable for families, frequently causing anxiety. A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty. This option would encompass the primary residential and commercial areas of Dyce and would provide improved active travel provision for short- to medium-distance trips to leisure, education and employment opportunities in the local area, including east-west trips, particularly for those without access to any other means of transport and who would otherwise be unable to access key services, as an alternative to motorised transport.

Overall, considering the potential for the option to increase accessibility and active travel permeability across a large part of the study area, this option would be expected to have a **moderate positive impact** on this criterion.

11.5.15 O25 – Implement access only restrictions for general traffic on Victoria Street

A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including within the vicinity of this option, with data zones identified to be at medium risk of transport poverty to the east and west of Victoria Street in this location. This option could provide a beneficial impact in tackling inequality experienced by socio-economically disadvantaged groups, with the implementation of access only restrictions creating a space within the centre of Dyce which is more attractive to those walking,

[140] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf
[141] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf

wheeling and cycling.

Transport is seen as an essential component for low-income families to access essential services, such as education, employment and childcare services as a means of escaping poverty, as well as supporting their general wellbeing.[142] Access to transport is shaped by three key factors: affordability, accessibility, and individual household circumstances. Transport often represents a significant cost to those that carry out low-paid, low-skilled or 'atypical' work that involves irregular shifts or hours and has been cited as unmanageable for families, frequently causing anxiety. A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including within the vicinity of this option, with data zones identified to be at medium risk of transport poverty on either side of Victoria Street. This option would provide improved active travel provision on Victoria Street and for accessing central Dyce, particularly for those without access to any other means of transport and who would otherwise be unable to access key services.

Further assessment is required to better understand where access only restrictions place a constraint on accessibility for those who are not able to travel by active and sustainable modes of transport, however, it is assumed that public transport access itself would be maintained under this option.

Overall, on balance, this option would be expected to have a **minor positive impact** on this criterion, subject to further development.

11.5.16 O26 – Implement one-way restrictions for general traffic on Victoria Street

A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including within the vicinity of this option, with data zones identified to be at medium risk of transport poverty to the east and west of Victoria Street in this location. This option could provide a beneficial impact in tackling inequality experienced by socio-economically disadvantaged groups, with the implementation of one-way restrictions creating a space within the centre of Dyce which is more attractive to those walking, wheeling and cycling. A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including within the vicinity of this option, with data zones identified to be at medium risk of transport poverty on either side of Victoria Street.

Transport is seen as an essential component for low-income families to access essential services, such as education, employment and childcare services as a means of escaping poverty, as well as supporting their general wellbeing.[143] Access to transport is shaped by three key factors: affordability, accessibility, and individual household circumstances. Transport often represents a significant cost to those that carry out low-paid, low-skilled or 'atypical' work that involves irregular shifts or hours and has been cited as unmanageable for families, frequently causing anxiety. A combined 89% of data zones in the study area are identified to be at medium risk (65%) or high risk (24%) of transport poverty, including within the vicinity of this option, with data zones identified to be at medium risk of transport poverty on either side of Victoria Street This option would provide improved active travel provision along Victoria Street, particularly for those without access to any other means of transport and who would otherwise be unable to access key services.

This option would, however, impact on access for some vehicle users (including bus users) who would be required to re-route via Riverview Drive to facilitate the one-way traffic flow along Victoria Street. Further assessment is required to better understand where one-way restrictions place a constraint on accessibility for those who are not able to travel by active and sustainable modes of transport directly to their destination.

Overall, on balance, this option would be expected to have a **minor positive impact** on this criterion, subject to further development.

11.6 Summary

This Chapter has set out the outcomes of a series of impact assessments undertaken to inform the Detailed Appraisal, including the EqIA, CRWIA, HIIA and FSDA. The following Chapter sets out the work undertaken to progress the assessment of the Table 1 options in parallel to the key tasks set out in this report for the Table 2 options.

[142] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf
[143] Transport Scotland, 2021. Transport and Child Poverty – Beyond the Pandemic. Available at: https://www.transport.gov.scot/media/49932/transport-and-child-poverty-beyond-the-pandemic.pdf

12. Cost to Government

12.1 Introduction

STAG requires that the net cost of an option is assessed from a public spending perspective, which is then compared with the total benefits of the option in terms of the STAG criteria, allowing an overall value for money assessment to be made.

Cost to Government refers to all costs incurred by the public sector as a whole net of any revenues. The total net cost consists of:

- Investment (capital) costs – including all infrastructure and other capital costs incurred by public sector operators which are additional to those incurred in the Do Minimum scenario;
- Operating and maintenance costs – including the annual recurring costs incurred by the public sector in running and maintaining the option considered;
- Grant/subsidy payment – should private sector operators not cover the investment and operating costs, some form of grant or subsidy may be required for the delivery of an option by private sector operators;
- Revenues – user charges, which represent monetary transfers from the users to the Government; and
- Taxation impacts – options which substantially promote public transport can lead to reductions in indirect tax receipts by shifting expenditure from cars and car fuel, which are heavily taxed, to public transport services on which the indirect tax rate is relatively low.

This Chapter outlines high-level cost estimates for the remaining options in Table 2.

12.2 Capital Costs – Table 2 Options

This section sets out high-level cost estimates for the Table 2 options under assessment at the Detailed Appraisal stage of the study. The cost for each option is broken down into the relevant Manual of Contract Documents for Highway Works (MCHW) series with itemised rates included.

The rates used to develop the estimates are taken from SPONS 2023 and are current to Q3/2023 using an uplift factor. Although an uplift factor for Q4/2023 is now available, the estimates have been produced to Q3 for consistency with earlier costing of Table 1 options (see below). Some of the rates have been collated by AECOM based on work with other local authorities and are typically more accurate than SPONS.

General assumptions, inclusions and exclusions in the composition of the estimates are as follows:

- Risk and contingency included at 44% of construction costs;
- Costs do not include price of land acquisition, further investigation / survey, detailed earthworks, structures, retaining walls or enhanced drainage;
- Costs reflect the core intervention associated with each option – extras that would likely be considered in more detailed scoping of design schemes for delivery, such as general carriageway resurfacing, have not been accounted for.
- 10% of quantified construction costs have been added for the utility diversions.

Table 12-1: Estimated Option Costs

Option	Estimated Construction Cost (Q3/2023)
AT26 – Improve active travel connectivity between the A947 study area and TECA	**£1,114,000**
AT31 – Improve active travel links between the Riverside Path and housing within Dyce	**£56,000**
AT33 – Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road	**£84,000**
AT35a – Implement improvements to develop a mixed-traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae	**£299,000**
AT41a – Improve active travel access to the retail park at the Bucksburn Roundabout (Shared Use Option)	**£153,000**
AT41b – Improve active travel access to the retail park at the Bucksburn Roundabout (Segregated Option)	**£562,000**
AT43 – Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)	**£62,000**
AT48a – Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North	**£4,939,000**
AT51 – Implement with-flow segregated cycleway on Old Meldrum Road	**£807,000**
AT52 – Implement two-way segregated cycleway on Old Meldrum Road	**£650,000**
AT58 – Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport	**£3,502,000**
AT61a – Implement package of active travel measures on Victoria Street	**£645,000**
AT65 – Implement streetscape improvements and widened pavements along Mugiemoss Road	**£308,000**
O2 – Review the layout of the Victoria Street/Skene Place Junction	**£8,000**
O3 – Review the layout of the Riverview Drive/Balloch Way Junction	**£29,000**
O4 – Review the layout of the Riverview Drive/Todlaw Walk Junction	**£29,000**
O5 – Review the layout of the Riverview Drive/Netherview Avenue Junction	**£45,000**
O7 – Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer	**£30,000**
O8 – Review the layout of the A947/Stoneywood Brae Junction	**£18,000**

A more detailed summary of the above costs is provided in **Appendix F** – this considers:

- Risk and Contingency;
- Design;
- Placemaking;
- Site Supervision and Project Management;
- Traffic Management; and
- Monitoring and Evaluation.

Further cost breakdown for the options has also been provided to ACC under separate cover.

12.3 Operating and Maintenance Costs – Table 2 Options

It is anticipated that maintenance costs would be associated with each of the costed options. These would generally be expected to be associated with the requirement to maintain signing/lining associated with, for example, the shared use paths and cycleways. There will be the need for occasional footway and cycleway sweeping and general repairs. This infrastructure would also require winter maintenance. It is assumed that these costs could largely be covered by existing maintenance programmes for similar schemes in the city.

ACC would require to identify the maintenance requirements associated with options progressing to business case stage – and thereafter, implementation.

12.4 Other Costs – Table 2 Options

The options under consideration do not incorporate user charging, and therefore no revenues would be anticipated in terms of monetary transfers from the users to the Government.

It is also not anticipated that the options under consideration would generate any notable impacts in terms of taxation relating to the promotion of public transport.

12.5 Table 1 Option Costs

The Table 1 Option Costs have been provided to ACC under separate cover.

12.6 Options Not Costed

Some Table 1 and Table 2 options have not been costed at this stage – the reasons for this are set out in the table below.

Table 12-2: Options Not Costed

Option	Rationale
AT8 – Reconfigure the Auchmill Road/Old Meldrum Road junction to improve connections for pedestrians and cyclists	Junction proposals at this location will be progressed and consulted on as part of the A96 corridor study design with the A947 study proposals for Old Meldrum Road tying-in to what emerges from the A96 appraisal.
AT19 – Implement pedestrian crossing facilities at the Old Meldrum Road/Mugiemoss Road junction	Pedestrian crossing facilities have been developed as part of works under the Old Meldrum Road / Mugiemoss Road committed scheme. As a result, there was no design work undertaken for Option AT19 prior to the option being sifted.
AT20 – Conduct a footway review throughout the study area, identifying gaps in provision and considering the width and surfacing of existing footways	Carried out as a site walkover using GIS applications with the findings delivered as a technical note.
AT30 – Provide direct active travel link between Dyce Drive and Riverview Drive	Improvements proposed for AT13, AT14 and AT59 support the fulfilment of this option – no specific design work has been carried out for AT30.
AT68 – Conduct a review of wayfinding signage throughout the study area	Carried out as a site walkover using GIS applications with the findings delivered within **Appendix B.**
PT2 – Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor	Further development of this option would be necessary to determine cost. Detailed transport modelling would be required to understand impacts that implementing traffic signal priority (TSP) technology would have on the A947.
O11 – Undertake a review of parking arrangements on Victoria Street	Carried out as combination of a site walkover and desk study with the findings delivered within **Appendix B.**
O15 – Introduce placemaking and gateway features on Victoria Street	Various Table 2 options have a direct impact on the opportunities available to deliver placemaking and gateway features on Victoria Street. Specific costing of this option is therefore not appropriate at this time.
O10 – Review layout of the A947/McDonalds access road junction	No design work has been carried out on this option as the existing junction radii meets DMRB CD 123 minimum requirements. Layout of the junction may be altered if AT41b is progressed but, in isolation, O10 has no associated cost.

Option	Rationale
O16 – Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce	The area of the 20-minute neighbourhood is subject to further assessment and engagement with the local community.
O25 – Implement access only restrictions for general traffic on Victoria Street	No design work carried out to date. Option is subject to consultation and further development to determine impacts on stakeholders.
O26 – Implement one-way restrictions for general traffic on Victoria Street	No design work carried out to date. Option is subject to consultation and further development to determine impacts on stakeholders.

12.7 Value for Money

As noted earlier in the report, AMAT has been used to undertake an analysis of the economic performance of the six options most likely to achieve modal shift, taking account of option route length and change in extent of physical infrastructure provision. This has assessed the net cost of each option from a public spending perspective and compared this with the total benefits of the option in terms of the STAG Criteria, to allow an overall value for money assessment to be made.

Table 12-3, on the following page, provides a summary of the monetised impacts of each option assessed using AMAT. It is important to note that Table 12-3 sets out those benefits that can be monetised in the assessment framework and does not include other possible socio-economic impacts. More detail on the AMAT assessment, including the assumptions contained within, is included in the AMAT technical note, which forms **Appendix H.**

Table 12-3 includes the following:

- Present Value of Benefits (PVB): The total benefits the intervention is expected to deliver over the appraisal period. These values are discounted and deflated to 2010 values and prices.
- Present Value of Costs (PVC): The total cost of the intervention to central and local government, including any additional costs associated with maintaining the infrastructure.
- Net Present Value (NPV): NPV is a metric used to evaluate the profitability of an investment or project. NPV represents the discounted sum of all future benefits minus the discounted sum of all future costs over a specified appraisal period (in this case, 20 years). It provides the net cost of an option from the public sector's perspective.
- Benefit to Cost Ratio (BCR): The ratio of the PVB and the PVC, indicating the relative costs and benefits of the proposed intervention.

Based on value of money categories described in the AMAT guidance144, options AT48a and AT58 have a 'Poor' BCR (between 0 and 1), options AT51, AT52 and AT61a have a 'Low' BCR (between 1 and 1.5) and option AT33 has a 'High' BCR (between 2 and 4). As has been emphasised within the AMAT assessment, this has been derived on travel to work/study and therefore does not include other potential benefits derived from leisure and recreational use. The shorter lengths of routes associated with options AT33, AT51 and AT52 may reduce the time people spend cycling or walking by providing more direct route choice and may partially offset the benefits associated with new walking and cycling trips generated by these options. In addition, option AT33 is in close proximity to Dyce Rail Station and would be expected to result in greater benefits beyond those captured by AMAT. It should also be noted that the options presented within this appraisal are not mutually exclusive and the cumulative effects would be greater.

[144] AMAT User Guide, Section 3.37, DfT, May 2022, *https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1102781/active-model-appraisal-toolkit-user-guidance.pdf*

Table 12-3: Value for Money Assessment

Metric	Option					
	AT33: improved active travel links between Dyce Rail Station and A947 and eastern section of Dyce, particularly along Station Road	AT48a: active travel improvements to support highest practicable level of service on A947 between Bucksburn Roundabout and Riverview Drive Roundabout North	AT51: with-flow segregated cycleway on Old Meldrum Road	AT52: two-way segregated cycleway on Old Meldrum Road	AT58: shared use path on Dyce Drive between A947 and Kirkhill Industrial Estate north of Aberdeen International Airport	AT61a: package of active travel measures on Victoria Street
Congestion Ber	£750	£107,990	£10,070	£10,070	£5,380	£14,290
Accident	£120	£17,400	£1,620	£1,620	£1,290	£2,300
Local Air Quality	£10	£740	£70	£70	£70	£100
Noise	£10	£1,160	£110	£110	£70	£150
Greenhouse Gas	£50	£7,080	£660	£660	£2,000	£940
Indirect Taxation	£0	-£40	£0	£0	£100	-£10
Journey Ambience	£93,520	£326,840	£261,430	£261,430	£157,860	£99,340
Reduced Risk of Premature Death	£8,720	£1,210,020	£133,220	£133,220	£387,300	£176,670
Reduced Absenteeism	£1,500	£201,960	£25,660	£25,660	£65,200	£32,280
PVB	£104,690	£1,873,160	£432,850	£432,850	£619,270	£326,060
PVC	£41,710	£2,451,490	£400,570	£322,740	£1,738,800	£320,190
NPV	£62,980	-£578,330	£32,280	£110,110	-£1,119,530	£5,870
BCR	2.51	0.76	1.08	1.34	0.36	1.02

12.8 Summary

This Chapter has provided a high-level overview of estimated costs associated with the remaining Table 2 options, including capital costs, operating and maintenance costs, and consideration of any other costs. It has also provided a Value of Money assessment for the six options that have been assessed using the AMAT tool. The following Chapter considers risk and uncertainties that should be considered through the progression of options to business case stage and identifies a series of measures that could be put in place to reduce the risks identified.

13. Risk and Uncertainty

13.1 Introduction

Risk management is a structured approach to identifying, assessing and controlling risks that emerge during the course of the option lifecycle. This supports better decision-making by developing a more thorough understanding of inherent risks and their likely impact. Risk management involves:

- Identifying possible risks in advance and putting mechanisms in place to minimise the likelihood of their materialising with adverse effects;
- Having processes in place to monitor risks, and access to reliable, up-to-date information about risks;
- The right balance of control in place to mitigate the adverse consequences of the risks, if they should materialise; and
- Decision-making processes supported by a framework of risk analysis and evaluation.

Risk management strategies should be adopted throughout the appraisal and implementation stages of proposals in order to ensure that steps have been taken to prevent and mitigate risks and uncertainties. Once reliable estimates of relevant costs are built up, risks are explicitly assessed and quantified, and work to minimise project-specific risks is undertaken, any Optimism Bias (risk and contingency) can be reduced.

Once risk factors have been explicitly quantified and valued, adjustment should be made to the costs and benefits in order to calculate risk-adjusted “expected values”. An expected value provides a single value for the expected impact of all risks. However, in general, even with a well-developed project, there will remain some risks which cannot be foreseen. In such cases it will not be possible to include these risks in the expected value, so instead a contingency figure should be added in order to take account of possible unanticipated risks.

This Chapter considers risk and uncertainties that should be borne in mind through the progression of options to business case stage and identifies a series of measures that could be put in place to reduce the risks identified. The only dedicated public transport option, PT2, is considered in terms of risk and contingency within this chapter however the final chapter of this report brings together the key outcomes of the Detailed Appraisal to determine whether this option should progress to the business case stage.

13.2 Risk Management Process

STAG states that all risks and uncertainties associated with an option need to be fully identified and accounted for in the appraisal process. As stated in the HM Treasury Green Book (2022)[145], in appraisals it is always likely there is some difference between what is expected and what actually happens. This is the consequence of biases unwittingly inherent in the appraisal process, and risks and uncertainties that materialise. As a result, it is important to identify and mitigate risks, and make allowances for Optimism Bias (risk and contingency).

The objectives of the risk management process are to:

- Identify risks from all sources;
- Assess the potential likelihood, impact and hence overall significance of those risks, thereby prioritising those most in need of management and mitigation;
- Identify an appropriate mitigation strategy;
- Allocate responsibility for management of the mitigation process; and
- Periodically review progress towards mitigation and assess the resultant reduction in the Optimism Bias (risk and contingency) uplift factor.

13.3 Risk Identification

The approach to risk management on the A947 Multi-Modal Corridor study to date has adopted the principles of both the ACC and AECOM approaches to risk identification and mitigation. The ACC approach requires:

[145] The Green Book, Central Government Guidance on Appraisal and Evaluation, HM Treasury (2022) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1063330/Green_Book_2022.pdf

1. Risk identification;
2. Analysis, assessment and evaluation of risks;
3. Identification of controls;
4. Implementation of control actions; and
5. Monitoring and reporting adequacy of controls.

ACC assesses risk levels according to level of impact (Very Serious, Serious, Material or Negligible) and likelihood (Almost Impossible, Very Low, Low, Significant, High and Very High).

This approach complements the flexible, partnering and responsive approach to risk management undertaken by AECOM. This requires the assessment of project risks at the outset of the project, with risks subsequently managed throughout.

Going forward, it is important that risks continue to be identified and managed through the lifecycle of the study. This will involve inputs from all appropriate stakeholders: in this case ACC, Nestrans and Aberdeenshire Council, together with other key stakeholders as appropriate. A Project Risk Workshop would be useful at an early stage, following identification of the preferred option(s) to be taken forward following the completion of the OBC. Prior to the workshop, attendees should be asked to advise on areas of potential risk and, from this, a list can be compiled to provide the basis for the discussions.

It is noted that a Risk Register was developed for the A947 Multi-Modal Corridor study as a whole at the Inception stage, and this continues to be monitored. This should form the basis of a more specific consideration of risks related to development of the preferred option(s).

13.4 Risks Identified Within STAG Appraisal

It is recognised that the identification of risks and uncertainties would form an ongoing process. At this stage, the following risks have been identified:

- Availability of funding – Funding for the preferred option(s) that will move to OBC stage has not yet been confirmed; however, the OBC will provide the basis for the preferred package of measures to be considered for future funding opportunities.
- Environment – as detailed within the Environmental appraisal, various issues have been identified as part of this study. Further assessment of key aspects including, for example, air quality, noise and vibration, would be required to establish any specific risks prior to the preferred option(s) being progressed. In addition, consultation with environmental specialists would be required in relation to specific aspects for example cultural heritage, ecology and archaeology. A scheme of protection measures would require to be implemented to eliminate the risk of pollution of watercourses during construction, where options are located in the vicinity of the River Don and its tributaries.
- Ground investigation – detailed ground investigation would require to be undertaken to establish any specific risks prior to the preferred option(s) being progressed, particularly where carriageway widening or realignment is required to accommodate active travel infrastructure.
- Future travel patterns and trip generation – a programme of modelling would be required to quantify in detail benefits of the preferred option(s) taken forward for further consideration.
- Consent risk – legal and planning issues, specifically where planning approval or powers are required.
- Political support and public acceptability.

13.5 Risk Register

Going forward, the Risk Register for the preferred option(s) should be structured to identify:

- A unique identification reference
- A description of the risk
- The stage of scheme development at which the risk might materialise
  - Planning;

  - Procurement;
  - Construction; or
  - Operations.
- Elements impacted by the risk
  - Capital expenditure;
  - Operating expenditure;
  - Revenue;
  - Programme;
  - Quality;
  - Functionality;
  - Approvability; and
  - Safety.
- The likelihood of realisation of the risk, the likely impact of the risk and hence its significance (a rating for which is derived from the product of likelihood and impact)
  - Prior to mitigation; and
  - Following mitigation.
- Responsibility for mitigation management
  - Lead responsibility; and
  - Support to be provided to task leader.
- Mitigation strategy
- Action taken
- Mitigation factor achieved

The Risk Register would be a living document subject to regular review and amendment. An initial draft risk register is set out within the table overleaf. Going forward, this should be expanded upon to include more detailed consideration of risks relating to the preferred option(s), taking cognisance of each of the aspects noted above.

Table 13-1: Indicative Risk Register

Category	Risk Assessment			Risk Description	Risk Nature	
	Risk Likelihood 1-5	Risk Impact 1-5	Risk Rating		Deliverability	Operation
3rd Parties/Stakeholders	5	4	20	Significant objections to proposals by stakeholders/public resulting in delays/challenges resulting in increasing costs.	✓	
Commercial	4	5	20	Anticipated bus patronage levels would need to be assessed to determine viability of bus priority at traffic signals (Option PT2).	✓	✓
Land and Compensation	4	4	16	Consent risk (and associated cost/feasibility risk) – legal and planning issues, specifically where planning approval or powers are required for use of third party land (Option AT58).	✓	
Funding	4	4	16	Financial support – Progressing interventions beyond the STAG and OBC stages will require further funding. There is a risk that sufficient funds may not be secured.	✓	✓
Asset Management	3	4	12	Existing road space reallocated to accommodate active travel infrastructure, adverse impacts on local traffic movements.	✓	✓

Category	Risk Assessment			Risk Description	Risk Nature	
Design	3	4	12	Design considerations inherent with all projects include uncertainty risks relating to, for example, topography, underground conditions, drainage issues, utilities and diversions. Further investigation of these aspects will be required for any options taken forward. There may additionally be design requirements relating to extended areas of hardstanding (for example for SEPA).	✓	
Relocation of Lighting	3	3	9	There may be a requirement to relocate lighting columns to accommodate proposed works.	✓	
Feasibility	4	3	12	Further investigation of the operational feasibility of some aspects will be required (e.g. reduction of A947 central reserve associated with Option AT41b to retain two lanes would require further investigations and consultation with the local authority to determine feasibility).	✓	
Environment	3	3	9	Pre-construction surveys undertaken by a suitably qualified ecologist would be required to establish potential	✓	

Category	Risk Assessment			Risk Description	Risk Nature	
				impacts on biodiversity and habitats, as a result of any options taken forward.		
3rd Parties/Stakeholders	3	3	9	Further consultation/surveys would be required to fully gauge the impacts of any options taken forward on residents, local businesses, and key transport service providers. This will include assessing impacts on on-street waiting, loading and parking provisions, and the impact of changes to traffic flows and access arrangements, associated with delivery of active travel measures.	✓	✓
Maintenance	3	3	9	Availability of funding/resource to maintain new infrastructure.	✓	✓
Construction	3	3	9	Weather – delays as a result of inclement weather.	✓	
Construction	3	3	9	Traffic management issues – problems with construction sequencing.	✓	✓
General – Modelling, Standards, Legislation, Taxation	3	3	9	Modelling (including detailed environmental assessment) will be required to quantify the impacts of any options taken forward.	✓	
Construction	2	3	6	Inflation risk – the risk that	✓	

Category	Risk Assessment			Risk Description	Risk Nature	
				actual inflation differs from assumed inflation rates. It is possible that the construction costs developed as part of this study could vary in the future.		
Construction	2	3	6	Impact on local businesses, and events during construction.	✓	
Construction	2	3	6	Impact of noise from construction on local residents and NSRs.	✓	
3rd Parties/Stakeholders	2	3	6	Difficulties in defining expectations and level of information required for those impacted by the scheme proposals.	✓	
Volume	2	3	6	Actual usage of the scheme(s) varies from the level forecast. It is possible that usage of the proposed active travel facilities could differ from the levels predicted, which could reduce the predicted benefits generated by the schemes in the AMAT assessment.		✓

Category	Risk Assessment			Risk Description	Risk Nature	
Technology	2	3	6	Changes in technology result in services being provided using non-optimal technology. It is possible that where technological solutions are provided as part of the study (for example traffic signals), obsolescence can occur over time (Option PT2).		✓

13.6 Uncertainties

It is recognised that no matter how well risks are identified and analysed, the future is uncertain. STAG therefore requires consideration of how future uncertainties could affect the choice between options.

STAG recognises that the identification of future uncertainties which, if realised, would cause a scheme to perform poorly, should not be viewed as a negative; rather, it provides decision makers with the important information regarding the robustness of study results, and highlights areas where mitigation can be put in place to ensure a positive outcome.

Table 13-2 sets out the key uncertainties identified at this stage of the study process. Should the decision be taken to proceed with preferred option(s), further consideration of these uncertainties would be required.

Table 13-2: Uncertainty Log

Uncertainty Type	Factor	Description	Timeframe	Uncertainty (Likelihood)	Impact on Options	Comments
Development	Development (General)	Realisation of developments within the immediate and wider study area (for example residential developments).	Within next 10 years	Near Certain	Medium	Changes in land use may result in changes in demand, with new housing developments acting as trip generators and business and community facilities acting as trip attractors. This could result in a shift in demand from trips between other locations, or in an overall increase in demand. This is likely to affect all modes.
Interdependencies	Interdependencies (A96 proposals)	Impact of A96 Multi-Modal Corridor Study proposals.	Within next 5 years	Reasonably Foreseeable	Medium	Configuration and feasibility of Option AT48a (in particular around the Bucksburn Roundabout area) and Options AT51/AT52 (towards the Old Meldrum Road / Auchmill Road junction) may be

Uncertainty Type	Factor	Description	Timeframe	Uncertainty (Likelihood)	Impact on Options	Comments
						impacted by the outcomes of the A96 STAG appraisal report – ACC are keeping abreast of the interdependency between both projects. In the case of Options AT51/AT52, the A96 study is promoting the active travel design solution at the junction itself.
Land Ownership	Land Ownership	Some interventions would require development of land that is not owned by ACC/Aberdeenshire Council.	Within next 5 years	Reasonably Foreseeable	High	It is uncertain what legal and planning issues may arise in relation to land ownership, specifically where planning approval or powers are required (applies to Option AT58).
Funding	Financial Support	Progressing interventions beyond the STAG and OBC stage will require further funding, either by ACC or their partners.	Within next 5 years	Reasonably Foreseeable	High	Progressing interventions beyond the STAG and OBC stage will require further funding, either by ACC or their partners.

Uncertainty Type	Factor	Description	Timeframe	Uncertainty (Likelihood)	Impact on Options	Comments
						Level of financial support available is uncertain.
Stakeholder Support	Stakeholder Support	Progressing interventions beyond the STAG and OBC stage will require stakeholder support.	Within next 5 years	Near Certain	High	Progressing interventions beyond the STAG stage will require stakeholder support. There may be acceptability issues for some of the interventions, as shown during consultation in Spring 2024 (for example relating to some of the proposals on Victoria Street), and approvals required where land-take is necessary.
Technology	Widespread Uptake of Autonomous Vehicles (AVs)	Advances in AV technology significantly alter travel behaviour and vehicle ownership.	Within next 15 years	Reasonably Foreseeable	Medium	Advancement in AV technology may result in an increase in travel demand, due to more usable travel time. However, it may encourage other changes in travel behaviour, such as increased car sharing, or reduced

Uncertainty Type	Factor	Description	Timeframe	Uncertainty (Likelihood)	Impact on Options	Comments
						car ownership/increased use of Mobility as a Service (MaaS). Even if AVs result in increased car use, features of AVs may mitigate traditional risks (for example usable travel time may place less emphasis on journey times, optimisation of speed/braking may improve reliability, removal of human error may reduce accidents). However, if AV technology is not accompanied by cleaner fuel, there may be implications for the environment, and greater reliance on private car may also have impacts on equality.
Technology	Widespread Uptake of Mobility as a Service (MaaS) and micro-mobility	Advances in MaaS and micro-mobility innovations (for example E-	Within next 10 Years	Reasonably Foreseeable	Medium	Advancement in MaaS technology may result in a move away from

Uncertainty Type	Factor	Description	Timeframe	Uncertainty (Likelihood)	Impact on Options	Comments
	innovations (for example E-Scooters)	Scooters) significantly alter travel behaviour and vehicle ownership.				private car use, by providing a viable alternative for all, and connecting the gaps in the public transport network, particularly in more rural areas. Affordable and integrated MaaS could result in a significant increase in demand for the existing public transport and active travel network. In the longer-term, effective MaaS may make it more attractive to live in rural locations and lead to a less dense land-use model. This may result in an increase in vehicle kilometres travelled, with implications for network capacity and potentially for the environment if other technological improvements are not undertaken simultaneously to

Uncertainty Type	Factor	Description	Timeframe	Uncertainty (Likelihood)	Impact on Options	Comments
						MaaS. There could be positive impacts in terms of equality if MaaS reduces reliance on car ownership and results in a connected and affordable transport network.
Travel Behaviour	Increased popularity of hybrid/home-working and online shopping	Enhanced digital connectivity and changing attitudes to where we live and work results in more home-working and online shopping.	Within next 5 years	Reasonably Foreseeable	High	Increased home-working and online shopping is likely to result in reduced travel for commuting and shopping purposes and may result in an overall reduction in travel demand. However, time savings associated with less commuting and travelling to shops could result in an increase in other travel purposes such as visiting friends and family, visiting the gym, active travel for leisure, and visiting cafes or restaurants

Uncertainty Type	Factor	Description	Timeframe	Uncertainty (Likelihood)	Impact on Options	Comments
						either during a lunch break, or at the start or end of the working day. Increased home-based working will also shift the pattern of trips observed during lunch breaks and before and after work, due to the change in origin.
Travel Behaviour	Increased popularity of walking, wheeling and cycling	Changes in travel behaviour due to attitudes to climate change and greater health consciousness result in significantly increased levels of walking, wheeling and cycling for all journey types.	Within next 5 years	Reasonably Foreseeable	High	Increased propensity to walk, wheel and cycle is likely to result in greater value for money for active travel infrastructure investment.
Demographics	Ageing Population	Increased life expectancy and reduced birth rate resulting in a greater proportion of older people.	Within next 20 Years	Near Certain	Medium/Low	Ageing population may lead to increased demand for public transport and active travel due to availability of concessionary travel and greater prevalence of medical conditions,

Uncertainty Type	Factor	Description	Timeframe	Uncertainty (Likelihood)	Impact on Options	Comments
						disabilities or medications which may prevent driving. There may also be an increased demand for public transport and active travel infrastructure to access health and social care services.
Environment	Disruption Impacts of Climate Change	Climate change results in increasing disruption to the transport network, including flooding, snow, ice, and extreme temperatures.	Within next 20 years	Reasonably Foreseeable	Medium	Disruptions could result in accidents, damage, closures, diversions and delays on the transport network.
Economic Conditions	Continued Economic Decline and Instability as a Result of Cost of Living Crisis	Continued economic decline and instability leads to higher levels of unemployment and low productivity.	Within next 5 years	Near Certain	Medium	Higher unemployment and lower productivity could affect demand for travel by all modes.
Policy	City Centre Car Restrictions	Significant policy measures are introduced to discourage private car trips into city centre locations (for example,	Within next 10 Years	Reasonably Foreseeable	Medium	Significant demand management measures in city centre locations (including the recently implemented

Uncertainty Type	Factor	Description	Timeframe	Uncertainty (Likelihood)	Impact on Options	Comments
		introduction of Low Emission Zone, Workplace Parking Levy and other demand management measures) to support net zero targets.				Aberdeen Low Emission Zone) could result in a shift away from private car to more sustainable modes for journeys to the city centre. This may also have longer-term implications for land-use, shifting to a denser population around major public transport nodes, which could in turn result in a reduction in car ownership and a broader shift to public transport and active travel.

13.7 Benefits Blueprint

STAG recommends that as part of an appraisal, an outline benefits realisation framework ("Benefits Blueprint") is considered. The purpose of a Benefits Blueprint is to maximise additional social and economic opportunities in the study area generated through implementing the proposed option(s).

The Benefits Blueprint will include, for example:

- The type of benefit;
- Who the benefit applies to;
- The expected outcomes; and
- How the benefit will be recorded – including the process to facilitate, manage and implement the additional benefits, and defined roles and responsibilities.

The Benefits Blueprint is founded on the objectives for the study, as described in Chapter Five of this report.

The benefits generated will be dependent on the specific option(s) taken forward, however, at this stage, it is expected that the benefits from improved active travel provision on the A947 study corridor will include the following:

- Transport outcomes – for example:
    - Change in mode share to walking, wheeling and cycling;
    - Reduced levels of vehicular traffic;
    - More attractive walking, wheeling and cycling environment;
    - Enhanced sense of 'place' within Dyce;
    - Improved levels of safety for active travel users, through reducing the risk of accidents and collisions between active travel users and between active travel users and general traffic; and
    - Improvement in bus journey times along study corridor.
- Societal impacts – for example:
    - Improved health and wellbeing of individuals, through increased levels of physical activity associated with walking, wheeling and cycling;
    - Improved air quality as a result of reduced levels of air pollution and greenhouse gas emissions, attributable to a reduction in vehicular traffic;
    - Positive impact on personal security due to increased natural surveillance as a result of increasing the number of people out and about walking, wheeling and cycling;
    - Improved sustainable access to employment, education, healthcare, leisure and other key facilities;
    - Reduced car ownership and associated positive impact on personal finances;
    - Improvements to journey quality for those walking, wheeling and cycling;
    - Positive impact on local services – research shows that people who walk, wheel or cycle to shops and services spend more money;
    - Reduced burden on healthcare systems and promotion of healthier communities, through increased levels of physical activity;
    - Reduced transport inequalities; and

- Reduced social isolation.

Benefits management and evaluation will be considered further as part of the Management Case of the Business Case for the preferred option(s).

13.8 Summary

Consideration of risk and uncertainty is essential throughout project development. Ongoing requirements have been set out which are necessary to manage risk and uncertainty during development of the preferred option(s). High-level consideration has also been given to benefits realisation. The following Chapter considers monitoring and evaluation.

14. Monitoring and Evaluation

14.1 Introduction

The Scottish Government requires monitoring and evaluation to be undertaken and documented for any proposal for which it provides funding or approval. STAG requires that a new project or strategy be subject to planned monitoring and evaluation, in additional to regular re-validation throughout its development.

Monitoring is an ongoing process of watching over the performance of a project, identifying problems as they arise and taking appropriate action, whilst evaluation is used for specific, post-implementation events, designed to assess the project performance against established objectives and to provide in-depth diagnosis of successes as well as deficiencies. Therefore, by gathering and interpreting information, monitoring and evaluation will demonstrate how the project or strategy performs against its objectives, identify any deficiencies, and allow adjustments to be made.

Soon after implementation, the performance of the scheme should be assessed against the specified objectives, requiring the data capture associated with scheme delivery. Recognising that certain projects require time before the full benefits can be realised, a further evaluation is required at an appropriate time after implementation.

In addition, regular monitoring of the scheme is essential against specified Key Performance Indicators (KPIs) to assess the ongoing effectiveness of the overall scheme and individual components. The only dedicated public transport option, PT2, is considered in terms of monitoring and evaluation within this chapter however the final chapter of this report brings together the key outcomes of the Detailed Appraisal to determine whether this option should progress to the business case stage.

This Chapter describes the measures which may be put in place by ACC to meet the requirements of the STAG with regards to monitoring and evaluation. An indicative monitoring process is displayed within **Figure 14-1**, on the following page.

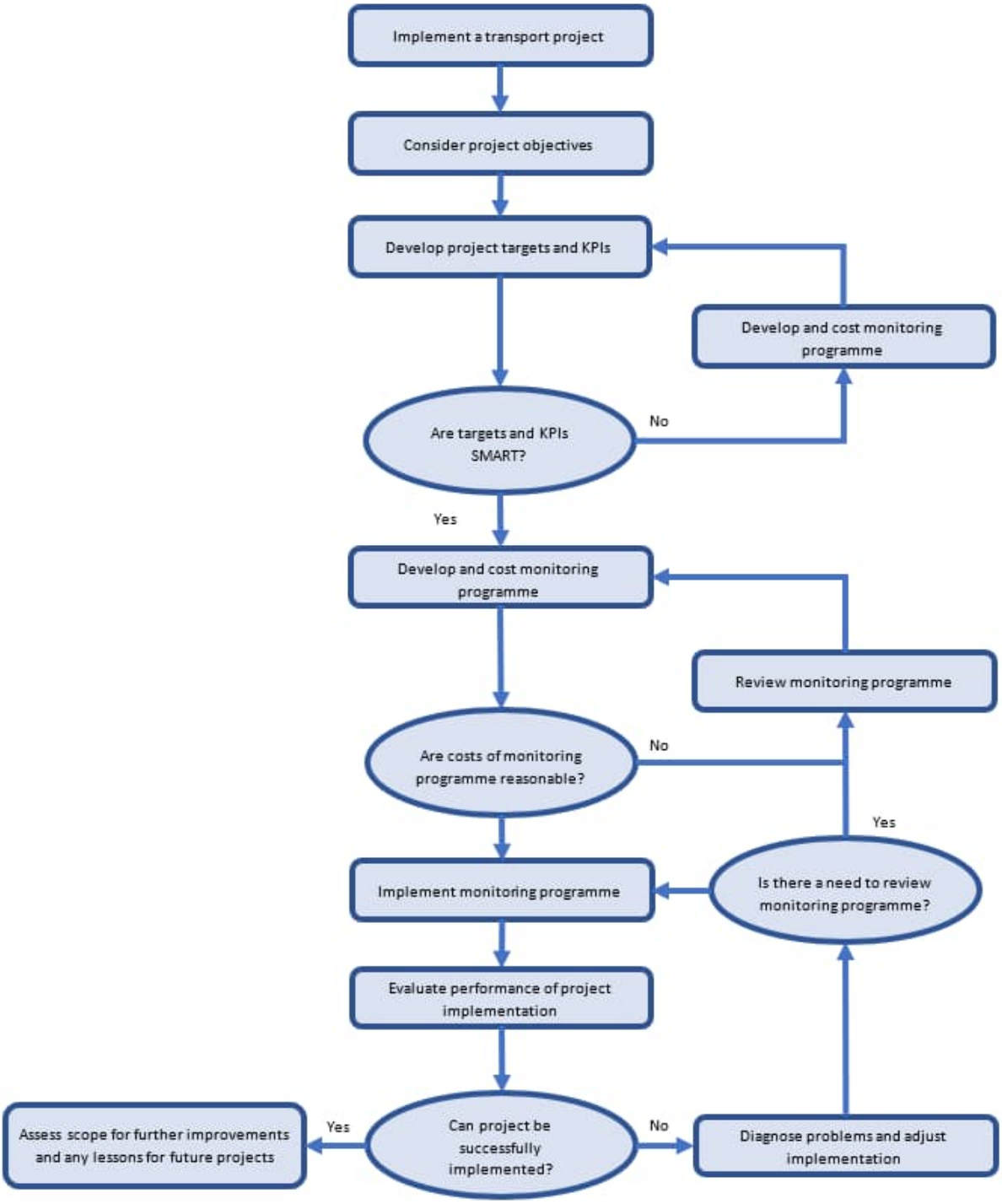

Figure 14-1: Indicative Monitoring Process

14.2 Objectives

14.2.1 Introduction

The specific study objectives are described in Chapter Five of this report. The objectives have been subject to further review at this stage of the study and were evaluated to confirm their continued applicability at this Detailed Appraisal stage.

14.2.2 Study Objectives

The specific objectives against which the proposals will be evaluated and monitored, are as follows:

- TPO1 – Increase the number of walking and wheeling trips in the study area by 20% within 5 years of project delivery (against a 2024 baseline); and
- TPO2 – Increase the number of cycling trips in the study area by 20% within 5 years of project delivery (against a 2024 baseline).

14.3 Base Case

It is considered premature to be prescriptive in terms of the establishment of the collection and organisation of the data that will provide the Base Case. It is anticipated that this will be developed and agreed with ACC and partners as appropriate, during the period immediately prior to completion/operation of the preferred option(s), and as a Baseline Report is prepared. This should be progressed by ACC at a later date.

It is likely that the baseline data may include, but will not necessarily be limited to:

- Active travel data along sections of the study area which will be affected by the proposals;
- Active travel infrastructure audits;
- Mode choice surveys;
- User satisfaction surveys;
- Traffic count data on key routes and at critical locations (to monitor change in mode share);
- Public transport metrics, including journey time and patronage data (particularly in relation to the implementation of Option PT2);
- Safety records; and
- Data to capture environmental factors in the study area.

It will be important to establish, through discussions with stakeholders, what information is available as part of their regular data gathering functions at that time, to avoid incurring additional cost and to limit the collection of new information to that which is strictly necessary to establish performance against the study objectives. This will contribute to the notion of undertaking monitoring and evaluation which is proportionate to the parameters of the study.

It is also noted that it may be necessary to obtain some baseline data prior to the start of construction to be certain that construction activities do not adversely impact the validity of any changes measured.

14.4 Project Development, Procurement and Construction

14.4.1 Project Validation

It is possible that circumstances may change within the time required for scheme development, approval and construction, which could affect the assumptions made regarding the proposals. During this time it will be necessary to keep under review the TPOs, taking into account any changes in the underlying transport situation.

14.4.2 Cost and Revenue and Programme Monitoring

It is recommended that a management team comprising various advisors be appointed to manage the process of monitoring cost and revenue and programme issues throughout the development and construction of the preferred option(s). The team will thereby evaluate any potential for changes in project costs and associated risks; with a clear audit trail logged and rationale for decision-making captured.

14.5 Operations

Evaluations are specific post-implementation events designed to identify whether:

- A project has performed as intended (or under or beyond expectations);
- Established objectives have been achieved (fully or partially, and the reasons for any failures); and
- The project continues to represent value for money (also considering actual cost budget).

The Process Evaluation is conducted immediately after implementation. It will draw lessons for on-going implementation and for the design, management and implementation of future projects.

For the reasons given above with respect to Base Case data, it is not possible at this stage to be specific about the nature of the process evaluation. It seems likely at this stage that there will be a need to provide data which will measure changes in the baseline parameters mentioned above such as various active travel datasets, bus passenger counts, mode choice surveys, bus journey time surveys, and user satisfaction surveys, together with junction performance where these are impacted by the measures, and safety and environmental parameters. Through evaluation, the degree to which change in datasets can be attributed to scheme delivery will be sought.

Table 14-1, below, summarises a possible example which might be employed as the basis for the process evaluation.

Table 14-1: Indicative Evaluation Performance Indicators

Aspect	Performance indicator/measure	Performance target	Source of indicator	Monitoring method and frequency
Costs	Proportion of actual costs over budget, including realisation of risk	X% of budget exceedance	Project costs	Budget and cost comparison – after implementation
	Proportion of budget allocated to ACC which was actually spent within timescale	X% budget spent by completion	Project costs by time	Project costs by time – after implementation
Views	The extent to which (stakeholder, public) consultation influenced outcomes	Significant number of views taken into account	Consultation process	Qualitative examination of consultation, by group
	Stakeholder's views on how well the project was designed and implemented	Overall positive views	Stakeholder interviews	Qualitative survey results by group – after implementation

Aspect	Performance indicator/measure	Performance target	Source of indicator	Monitoring method and frequency
Transport	The extent to which expected results reflect reality	Modal shift Accessibility Journey times Junction performance	Mode share surveys, user count data, bus service performance indicators (reliability) (Option PT2), accessibility mapping, junction performance surveys	Comparison between modelled and actual – after implementation and again one year later
User experience	The extent to which expected results reflect reality	Overall positive user experience	User satisfaction surveys	Qualitative survey results by user type – after implementation and again one year later
Local environment	Actual impact on environment	Air quality, noise and vibration, other environmental criteria as relevant	Before and after surveys	Comparison between before and one year after implementation, by location and activity
Safety	Actual impact on safety	Number of accidents and casualties by causality and location	Before and after data	Data collected by local authority/local Police Comparison between before and one year after implementation
Local economy	Actual impact on economic activity	Business performance	Local economy	Actual impact on economic activity Comparison between before and one year after implementation

Based upon the study TPOs, the following performance indicators could be appropriate:

- Active travel usage
    - Increase levels of walking, wheeling and cycling along the A947 corridor.
- Mode share
    - Increase the proportion of sustainable travel use for access to employment, education, leisure, healthcare and other key services.
- Active travel infrastructure
    - Availability of traffic-free walking, wheeling and cycling infrastructure.
    - Perceptions of quality and safety of active travel infrastructure.
- Public transport journey times (through the implementation of bus user priority at all traffic signals associated with Option PT2).
    - Increase average bus speeds along the A947 corridor.
    - Improve bus journey times and journey time reliability along the A947 corridor.

Table 14-2 summarises potential performance indicators and a possible monitoring programme.

Table 14-2: Potential Performance Indicators for Monitoring and Evaluation[146]

Aspect	Performance indicator	Definition of indicator	Performance target	Source of indicator/target	Monitoring method and frequency
Walking and Wheeling Mode Share	Active travel connections	Proportion of walking and wheeling trips for access to employment, education, leisure, healthcare and other key services	X% trips undertaken by walking and wheeling for all journeys.	Scottish Household Survey data; Hands Up Survey data; mode share surveys; non-motorised user (NMU) count equipment, in conjunction with ATC traffic count data and bus passenger data, could be used to monitor change in mode share.	Review of Scottish Household Survey data and Hands Up survey data for local authority area, annually. Bus passenger data, mode share surveys, ATC count data and NMU count data annually. Supplementary engagement and bespoke manual count surveys as required. Explore the potential for deploying mobile active travel counters.[147]
Cycling Mode Share	Active travel connections	Proportion of cycling trips for access to employment, education, leisure, healthcare and other key services	X% trips undertaken by cycling for all journeys.	Scottish Household Survey data; Hands Up Survey data; mode share surveys; non-motorised user (NMU) count equipment, in conjunction with ATC traffic count data and bus passenger data, could be used to monitor change in mode share.	Review of Scottish Household Survey data and Hands Up survey data for local authority area, annually. Bus passenger data, mode share surveys, ATC count data and NMU count data annually. Change in the number of recorded cyclists – Cycling Scotland Open Data – annually. Supplementary engagement and bespoke manual count surveys as required. Explore the potential for deploying mobile active travel counters.[148]

[146] This table should be read in conjunction with the indicators shown in the Revised Study SMART TPOs table in Section 5.4.

[147] In addition to this, it is understood that ACC have submitted a funding request to procure new active travel counters for stationing at Victoria Street, Riverview Drive and Old Meldrum Road. These will support monitoring and evaluation going forward.

[148] In addition to this, as noted earlier in this report, it is understood that ACC have submitted a funding request to procure new active travel counters for stationing at Victoria Street, Riverview Drive and Old Meldrum Road. These will support monitoring and evaluation going forward.

Aspect	Performance indicator	Definition of indicator	Performance target	Source of indicator/target	Monitoring method and frequency
Active Travel Provision	Active Travel Infrastructure	Availability of traffic-free walking, wheeling and cycling infrastructure	Kilometres of traffic-free walking, wheeling and cycling infrastructure	Infrastructure audits; use of Walking Route Audit Tool; GIS-based mapping ; Quality of cycling provision (Level of Service) – safety; directness; coherence; comfort; attractiveness; and adaptability.	Annual review.
Quality and Safety of Active Travel Provision	Perception of quality and safety of active travel infrastructure	Changes in perceptions of quality and safety of active travel provision	Improvement in perceptions of quality of active travel provision; and Improvement in perceptions of safety of active travel provision.	Engagement via active travel user satisfaction surveys, Citizens' Panel surveys, Community Councils, and employers' travel plans, for example, could inform performance indicators.	Annual user satisfaction surveys/engagement, supplemented with feedback via, for example, Community Councils, employers' travel plans etc, as available.
Bus Journey Times	M	Changes in journey times and journey time reliability by bus	Improvement in bus journey times along study corridor; Ability of buses to adhere to timetables.	Direct engagement with bus operators; journey time surveys; operator performance indicators; and INRIX data.	Annual journey time surveys; operator performance indicators as published; Tom-Tom data; TRACC public transport (bus) journey times; and INRIX data annually.

Going forward, these will be essential monitoring tools to gauge how any options subsequently implemented are performing. There will be a requirement for ACC to establish an evaluation regime for any schemes which progress through business case stage to construction.

In addition to the potential performance indicators set out within **Table 14-2**, consideration should also be given to utilising emerging and innovative data collection methods – such as STRAVA Metro, Better Points[149] or mobile phone data, where appropriate.

A detailed Monitoring and Evaluation Plan should be prepared as options move forward to implementation.

Before the monitoring programme is agreed upon, consideration must be given to the actual availability of the data, practicalities from collecting new data, its format, whether it will properly reflect the indicators proposed and the cost of obtaining it. Indicators and targets should be subject to regular reviews to ensure that they continue to properly reflect the performance of the project against its objectives, throughout the monitoring period.

[149] Better Points is an app which allows users to earn points for making sustainable journeys. Points can be redeemed for vouchers. HITRANS uses Better Points to monitor active travel journeys.

14.6 Summary

This Chapter has set out the study objectives, together with actions to be taken during the various phases from option development through to operation, to meet the requirements of the STAG guidance with respect to monitoring and evaluation. The next Chapter provides a summary of the key findings arising from the Detailed Appraisal and sets out the proposed package of measures for the OBC.

15. Next Steps – OBC Package Development

15.1 Detailed Appraisal Summary

This Chapter builds on the work completed in this Detailed Appraisal report to confirm the next steps for progression of an Outline Business Case (OBC) for the A947 study area. A summary of the Table 2 option scoring against the Detailed Appraisal criteria is provided below.

Table 15-1: Detailed Appraisal Option Scoring Summary (TPOs)

Option	Description	TPO1[150]	TPO2[151]
AT26	Improve active travel connectivity between the A947 study area and TECA	+1	+1
AT35a	Implement improvements to develop a mixed traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae	+1	+1
AT41a/b	Improve active travel access to the retail park at the Bucksburn Roundabout	+1	+1
O10	Review layout of the A947/McDonalds access road junction	+1	0
AT31	Improve active travel links between the Riverside Path and housing within Dyce	+1	+1
O3	Review the layout of the Riverview Drive/Balloch Way Junction	0	0
O4	Review the layout of the Riverview Drive/Todlaw Walk Junction	0	0
O5	Review the layout of the Riverview Drive/Netherview Avenue Junction	0	0
AT33	Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road	+1	+2
AT61a	Implement package of active travel measures on Victoria Street	+2	+3
O2	Review the layout of the Victoria Street/Skene Place Junction	+1	+1
O25	Implement access only restrictions for general traffic on Victoria Street	+3	+3

[150] Increase the number of walking and wheeling trips in the study area by 20% within 5 years of project delivery (against a 2024 baseline)
[151] Increase the number of cycling trips in the study area by 20% within 5 years of project delivery (against a 2024 baseline)

Option	Description	TPO1[150]	TPO2[151]
O26	Implement one-way restrictions for general traffic on Victoria Street	+2	+2
AT43	Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)	0	0
AT51	Implement with-flow segregated cycleway on Old Meldrum Road	0	+2
AT52	Implement two-way segregated cycleway on Old Meldrum Road	0	+2
AT65	Implement streetscape improvements and widened pavements along Mugiemoss Road	+1	+1
O7	Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer	0	0
O8	Review the layout of the A947/Stoneywood Brae Junction	0	+1
AT48a	Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North	+1	+2
AT58	Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport	+2	+2
PT2	Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor	0	0
O16	Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce	+3	+3

Table 15-2: Detailed Appraisal Option Scoring Summary (STAG Criteria)

Option	Description	Environment								Climate Change			Health, Safety and Wellbeing					Economy		Equality and Accessibility				
		Biodiversity and Habitats	Geology and Soils	Land Use	Water, Drainage and Flooding	Air Quality	Historic Environment	Landscape	Noise and Vibration	Greenhouse Gas Emissions	Vulnerability to Effects of Climate Change	Potential to Adapt to Effects of Climate Change	Accidents	Security	Health	Access to Health and Wellbeing Infrastructure	Visual Amenity	Transport Economic Efficiency (TEE)	Wider Economic Impacts (WEI)	Public Transport Network Coverage	Active Travel Network Coverage	Comparative Access by People Group	Comparative Access by Geographic Location	Affordability
AT26	Improve active travel connectivity between the A947 study area and TECA	0	0	0	0	0	0	0	0	0	0	+1	0	+1	+1	+1	0	+1	0	0	+1	+1	+1	+1
AT35a	Implement improvements to develop a mixed traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae	0	0	0	0	0	0	0	+1	0	0	0	+1	+1	+1	+1	0	+1	0	0	+1	+1	+1	+1
AT41a	Improve active travel access to the retail park at the Bucksburn Roundabout (Shared use)	-1	0	0	0	0	0	0	+1	0	0	+1	+1	+1	+1	+1	0	+1	+1	0	+1	+1	+1	+1
AT41b	Improve active travel access to the retail park at the Bucksburn Roundabout (Segregated)	0	0	0	0	0	0	0	0	0	0	+1												
O10	Review layout of the A947/McDonalds access road junction	0	0	0	0	0	0	0	0	0	0	0	+1	0	0	0	0	0	0	0	0	0	0	0
AT31	Improve active travel links between the Riverside Path and housing within Dyce	0	0	0	0	0	0	0	0	0	0	0	0	+1	+1	+1	0	+1	0	0	+1	+1	0	+1
O3	Review the layout of the Riverview Drive/Balloch Way Junction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O4	Review the layout of the Riverview Drive/Todlaw Walk Junction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O5	Review the layout of the Riverview Drive/Netherview Avenue Junction	0	0	0	0	0	0	0	0	0	0	0	+1	0	0	0	0	0	0	0	0	0	0	0
AT33	Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road	0	0	0	0	0	0	0	0	0	0	0	+1	+1	+1	+1	0	+1	0	0	+1	+1	+1	+1
AT61a	Implement package of active travel measures on Victoria Street	-1	0	0	0	0	0	0	+1	+1	-1	+1	+2	+1	+2	+2	+1	+1	+2	0	+2	+2	+1	+2
O2	Review the layout of the Victoria Street/Skene Place Junction	0	0	0	0	0	0	0	+1	0	0	0	+1	+1	0	0	0	0	0	0	0	0	0	0
O25	Implement access only restrictions for general traffic on Victoria Street	0	0	0	0	+2	0	0	+2	+1	0	0	+2	+1	+2	+1	+2	-2	+1	0	0	+1	+1	+1
O26	Implement one-way restrictions for general traffic on Victoria Street	0	0	0	0	+1	0	0	+1	+1	0	0	+1	+1	+1	+1	+1	+1	+1	-1	0	+1	+1	+1
AT43	Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)	0	0	0	0	0	0	0	0	0	0	+1	+1	0	+1	0	0	+1	0	0	+1	0	0	+1
AT51	Implement with-flow segregated cycleway on Old Meldrum Road	0	0	0	0	0	0	0	+1	0	0	0	+2	+1	+1	+1	0	-1	0	0	+1	+1	0	+1
AT52	Implement two-way segregated cycleway on Old Meldrum Road	0	0	0	0	0	0	0	+1	0	0	0	+1	+1	+1	+1	0	-1	0	0	+1	+1	0	+1

Option	Description	Environment								Climate Change			Health, Safety and Wellbeing					Economy		Equality and Accessibility				
		Biodiversity and Habitats	Geology and Soils	Land Use	Water, Drainage and Flooding	Air Quality	Historic Environment	Landscape	Noise and Vibration	Greenhouse Gas Emissions	Vulnerability to Effects of Climate Change	Potential to Adapt to Effects of Climate Change	Accidents	Security	Health	Access to Health and Wellbeing Infrastructure	Visual Amenity	Transport Economic Efficiency (TEE)	Wider Economic Impacts (WEI)	Public Transport Network Coverage	Active Travel Network Coverage	Comparative Access by People Group	Comparative Access by Geographic Location	Affordability
AT65	Implement streetscape improvements and widened pavements along Mugiemoss Road	0	0	0	0	0	0	0	+1	0	0	0	+2	+1	+1	+1	+1	+1	+1	0	+1	+1	0	+1
O7	Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer	0	0	0	0	0	0	0	0	0	0	0	+1	0	0	0	0	0	0	0	0	0	0	0
O8	Review the layout of the A947/Stoneywood Brae Junction	0	0	0	0	0	0	0	0	0	0	0	+1	0	0	0	0	0	0	0	0	0	0	0
AT48a	Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North	0	0	0	0	0	0	0	+1	+1	-1	+1	+2	+1	+2	+1	0	+1	+1	0	+1	+1	+1	+1
AT58	Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport	-2	0	0	0	0	0	0	+1	+1	-1	+1	+2	+1	+1	+1	0	+1	0	0	+1	+1	+1	+1
PT2	Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor	0	0	0	0	0	0	0	+1	+1	0	0	+1	0	+1	+1	0	+1	+1	0	0	+1	+1	0
O16	Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce	0	0	0	0	+1	0	0	+1	+1	-1	+1	+1	+1	+2	+2	+2	+1	+2	0	+2	+2	+2	+2

Table 15-3: Detailed Appraisal Option Scoring Summary (Statutory Impact Assessment Criteria)

Option	Description	EqIA	CRWIA	HIIA	FSDA
AT26	Improve active travel connectivity between the A947 study area and TECA	+1	+1	+1	+1
AT35a	Implement improvements to develop a mixed traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae	+1	+1	+1	+1
AT41a/b	Improve active travel access to the retail park at the Bucksburn Roundabout	+1	+1	+1	+1
O10	Review layout of the A947/McDonalds access road junction	0	0	0	0
AT31	Improve active travel links between the Riverside Path and housing within Dyce	+1	+1	+1	0
O3	Review the layout of the Riverview Drive/Balloch Way Junction	N/A	N/A	N/A	N/A
O4	Review the layout of the Riverview Drive/Todlaw Walk Junction	N/A	N/A	N/A	N/A
O5	Review the layout of the Riverview Drive/Netherview Avenue Junction	N/A	N/A	N/A	N/A
AT33	Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road	+1	+1	+1	+1
AT61a	Implement package of active travel measures on Victoria Street	+2	+1	+2	+1
O2	Review the layout of the Victoria Street/Skene Place Junction	0	0	0	0
O25	Implement access only restrictions for general traffic on Victoria Street	+1	+1	+1	+1
O26	Implement one-way restrictions for general traffic on Victoria Street	+1	+1	+1	+1
AT43	Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)	+1	0	+1	+1
AT51	Implement with-flow segregated cycleway on Old Meldrum Road	+1	+1	+1	0
AT52	Implement two-way segregated cycleway on Old Meldrum Road	+1	+1	+1	0
AT65	Implement streetscape improvements and widened pavements along Mugiemoss Road	+1	0	+1	0
O7	Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer	0	0	0	0
O8	Review the layout of the A947/Stoneywood Brae Junction	0	0	0	0

Option	Description	EqIA	CRWIA	HIIA	FSDA
AT48a	Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North	+1	+1	+1	+1
AT58	Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport	+1	0	+1	0
PT2	Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor	+1	0	+1	+1
O16	Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce	+2	+1	+2	+2

Table 15-4: Detailed Appraisal Option Scoring Summary (Deliverability Criteria)

Option	Description	Feasibility	Affordability	Public Acceptability
AT26	Improve active travel connectivity between the A947 study area and TECA	Low	Low	Low
AT35a	Implement improvements to develop a mixed traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae	Medium	Medium	Medium
AT41a/b	Improve active travel access to the retail park at the Bucksburn Roundabout	Low / Medium	Medium / High	Low / Medium
O10	Review layout of the A947/McDonalds access road junction	Low	Low	Low
AT31	Improve active travel links between the Riverside Path and housing within Dyce	Medium	Low	Low
O3	Review the layout of the Riverview Drive/Balloch Way Junction	Low	Low	Low
O4	Review the layout of the Riverview Drive/Todlaw Walk Junction	Low	Low	Low
O5	Review the layout of the Riverview Drive/Netherview Avenue Junction	Low	Low	Low
AT33	Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road	Medium	Low	High

Option	Description	Feasibility	Affordability	Public Acceptability
AT61a	Implement package of active travel measures on Victoria Street	Medium	Medium	High
O2	Review the layout of the Victoria Street/Skene Place Junction	Low	Low	High
O25	Implement access only restrictions for general traffic on Victoria Street	Medium	Low	High
O26	Implement one-way restrictions for general traffic on Victoria Street	Medium	Low	High
AT43	Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)	Low	Low	Low
AT51	Implement with-flow segregated cycleway on Old Meldrum Road	Medium	Low	Medium
AT52	Implement two-way segregated cycleway on Old Meldrum Road	Medium	Low	Medium
AT65	Implement streetscape improvements and widened pavements along Mugiemoss Road	Low	Low	Medium
O7	Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer	Low	Low	Low
O8	Review the layout of the A947/Stoneywood Brae Junction	Low	Low	Medium
AT48a	Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North	High	Medium	Medium
AT58	Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport	High	High	Low
PT2	Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor	Medium	Medium	Medium
O16	Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce	Medium	Medium	Medium

15.2 OBC Package Composition

The table below has been prepared to summarise the outcomes of the Detailed Appraisal and to confirm which of the remaining Table 2 options should be progressed to OBC stage.

Table 15-5: Detailed Appraisal Outcome

Option Ref	Description	Detailed Appraisal Outcome	Progress to OBC
AT26	Improve active travel connectivity between the A947 study area and TECA	While this option has minor positive impacts across many of the appraisal criteria, it is considered that the key components of the option, including implementation of wayfinding signage and path surfacing, could be considered for delivery by ACC as 'quick wins'. Therefore there would not be a requirement to provide a case for this option as part of the OBC.	**No**
AT35a	Implement improvements to develop a mixed traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae	With this option adding to the existing active travel network and improving provision in the west of the study area, it is considered that Option AT35a should be promoted for assessment within the OBC.	**Yes**
AT41a/b	Improve active travel access to the retail park at the Bucksburn Roundabout	This option would improve active travel provision from the north of Old Meldrum Road to the retail park at Bucksburn Roundabout. Proposed works include the creation of either a shared use facility between the A947 crossing and the retail park or carriageway width reduction to facilitate a segregated two-way cycleway. This option should be promoted for assessment within the OBC, with a preferred design solution to be identified following the development of the business case.	**Yes**
O10	Review layout of the A947/McDonalds access road junction	While this option in isolation has neutral impacts across most of the appraisal criteria, junction layout alterations can be considered in conjunction with Option AT41 to improve active travel infrastructure and safety in this part of the study area, and, on this basis, should be promoted for assessment within the OBC.	**Yes**
AT31	Improve active travel links between the Riverside Path and housing within Dyce	This option is expected to add to the existing active travel network and increase connectivity between Riverview Drive (south of the Todlaw Walk junction) and the Riverside Path. As this option has minor positive impacts across many of the appraisal criteria and would promote uptake of active travel for leisure trips in the study area, it is considered appropriate to include Option AT31 within the OBC.	**Yes**
O3	Review the layout of the Riverview Drive/Balloch Way Junction	While the design and costing of each of these options has been developed on the basis of their implementation without the wider segregation on Riverview Drive, the principles of each option (junction kerb radii being reduced to manage entry/exit speeds and improved attractiveness/accessibility for crossing users) would still be required as part of Option AT48a. The collective range of improvements including segregation and junction adjustments are captured as part of this option. On this basis, and on the basis that Option AT48a is to progress to the OBC (see below), these individual options are no longer required.	**No**
O4	Review the layout of the Riverview Drive/Todlaw Walk Junction		**No**
O5	Review the layout of the Riverview Drive/Netherview Avenue Junction		**No**

Option Ref	Description	Detailed Appraisal Outcome	Progress to OBC
AT33	Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road	This option would offer minor positive impacts across many of the appraisal criteria, and, together with the inclusion of Option O2 in the OBC, would offer complementary support for an overall integrated active travel strategy in the Victoria Street area.	**Yes**
AT61a	Implement package of active travel measures on Victoria Street	This option would offer moderate positive impacts on aspects relating to health, safety and wellbeing, wider economic impacts, accessibility and equality; and minor positive impacts across a number of the other appraisal criteria. This option could be considered as an overarching strategy to deliver an active travel environment in the Victoria Street area, and, on this basis, should form part of the OBC.	**Yes**
O2	Review the layout of the Victoria Street/Skene Place Junction	While this option in isolation has neutral impacts across most of the appraisal criteria, junction layout alterations can be considered in conjunction with options to improve active travel infrastructure and safety in this part of the study area. Therefore, together with the inclusion of Option AT33 in the OBC, there would be complementary support for an overall integrated active travel strategy in the Victoria Street area.	**Yes**
O25	Implement access only restrictions for general traffic on Victoria Street	On the basis that this option has the potential for moderate negative impacts in terms of economy, and has significant risks in terms of public acceptability, it is not recommended to progress to the OBC. Further analysis of the option has proposed that restrictions on access would work most effectively on the north section only between Pitmedden Road and Riverview Drive Roundabout North. It would be challenging to implement on the southern half of Victoria Street without impacting access to public services, commercial units and Dyce Rail Station and it is anticipated that this would meet resistance from a range of stakeholders.	**No**
O26	Implement one-way restrictions for general traffic on Victoria Street	This option has the potential to complement the wider package of measures being considered for Victoria Street, and, on this basis, should form part of the OBC to further the case for the delivery of an overall integrated active travel strategy for this area.	**Yes**
AT43	Implement active travel connection between the A947 and the B977, utilising a section of the old A947 (pre-AWPR)	This option provides a degree of connectivity with the nearby access to the F&B Way; however the opportunity for substantial connectivity improvement was limited by the existing constraints of the B977 corridor, specifically the restricted visibility and narrow cross section under the F&B overbridge which negates opportunity for allocation of a dedicated active travel space. With the proposed wider improvement to the F&B Way through to Dyce Rail Station, and the improved connectivity with the F&B Way north of Dyce proposed by Option AT13 (Table 1) it would be anticipated that there would be few users joining or leaving the F&B Way at this point. While this option does inform the northern extent of Option AT59 (Table 1), the only real benefit of retaining this option would be to support better accessibility and connection between the bus stops on either side of the A947 (and the widened shared use path being progressed under Option AT58), and, overall, it is not considered that this	**No**

Option Ref	Description	Detailed Appraisal Outcome	Progress to OBC
		would have a significant impact. On this basis, this option is not proposed to form part of the OBC package of measures.	
AT51	Implement with-flow segregated cycleway on Old Meldrum Road	It is proposed that Option AT51 is progressed to the OBC on the basis that this provides a higher level of service than Option AT52 (and a preferred solution in terms of safety). The scheme would tie-in to active travel proposals at the south end of Old Meldrum Road (at the Auchmill Road junction) which are being considered as part of the A96 corridor study, supporting an integrated active travel solution for the north-west of the city. There may be a greater public acceptability risk relative to Option AT52 as this option would require some localised footway narrowing to an absolute minimum width to facilitate retention of on-street parking at the northern end. Both Option AT51 and Option AT52 would require removal of on-street parking at the southern end of Old Meldrum Road to facilitate implementation of segregated active travel facilities.	**Yes**
AT52	Implement two-way segregated cycleway on Old Meldrum Road	While Option AT52 would offer similar levels of benefit locally in the study area as Option AT51, on the basis that with-flow segregation (Option AT51) provides a higher level of service for users (and is a preferred solution in terms of safety, where there are vehicle crossovers and junctions as on Old Meldrum Road), Option AT52 is not proposed to form part of the OBC package of measures.	**No**
AT65	Implement streetscape improvements and widened pavements along Mugiemoss Road	While this option has minor positive impacts across many of the appraisal criteria, it is considered that the key components of the option, including streetscape improvements and footway widening, could be considered for delivery by ACC as 'quick wins'. Therefore, there would not be a requirement to provide a case for this option as part of the OBC. It should be noted that the deliverability of this option has been enhanced with the wider improvements recently implemented in the area, particularly the removal of southbound access onto Mugiemoss Road.	**No**
O7	Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer	While this option in isolation has neutral impacts across most of the appraisal criteria, junction layout alterations can be considered in conjunction with options to improve active travel infrastructure and safety in this part of the study area, and, on this basis, should be promoted for assessment within the OBC.	**Yes**
O8	Review the layout of the A947/Stoneywood Brae Junction	While this option in isolation has neutral impacts across most of the appraisal criteria, junction layout alterations can be considered in conjunction with options to improve active travel infrastructure and safety in this part of the study area, and, on this basis, should be promoted for assessment within the OBC.	**Yes**
AT48a	Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North	This option offers positive impacts across the majority of the appraisal criteria, supporting the promotion of an overall coherent and connected active travel network. With an overall objective to support the highest practicable level of service on the study corridor between Bucksburn Roundabout and Riverview Drive Roundabout (North), the option has low risk in terms of public acceptability. Together with other active travel options, this option would support delivery of an integrated	**Yes**

Option Ref	Description	Detailed Appraisal Outcome	Progress to OBC
		active travel strategy for the A947 study area as a whole, and, on this basis, should be promoted for assessment within the OBC.	
AT58	Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport	This option would offer positive impacts across most of the appraisal criteria – supporting the promotion of an overall coherent and connected active travel network. Notably, this option would satisfy a gap in the network in the north of the study area, and, on this basis, should be promoted for assessment within the OBC. Going forward, this option will need to consider technical limitations associated with the length of the route and constraints relating to third party land, existing infrastructure and the need to provide crossing points on a higher speed road – a reduced speed limit and priority pedestrian crossings on the section of Dyce Drive between Pitmedden Road and the Industrial Estate form part of the proposals.	**Yes**
PT2	Conduct a traffic signal review to consider bus priority at all traffic signals along the A947 corridor	On the A947 corridor, there are signal controlled junctions at Stoneywood Road/Beech Manor, Market Street/Stoneywood Terrace, Stoneywood Park at the southern end, and the B977 to the north. In each junction at the southern end, there is a single lane for through traffic, therefore adapting signals to improve bus priority with approach detection would generally only improve bus through-flow when they are close to the front of the queuing traffic. There may be some minor benefits but given the relatively low number of signalised junctions, this is unlikely to lead to significant improvements to bus journey times, and, on this basis, this option is not proposed to form part of the OBC package of measures.	**No**
O16	Implement package of measures to support implementation of a 20-minute neighbourhood in Dyce	It is considered that a combined package of options from the packages conceived for the study consultation can, collectively, serve as an integrated sustainable travel strategy for Dyce (and the A947 study area as a whole). On this basis, it is considered that the implementation of the OBC packages can deliver on the principles associated with 20-minute neighbourhoods and it is therefore considered that Option O16 in its own right is not required to be promoted directly as part of the business case.	**No**

Considering the above – and the previously identified options from Table 1 progressing directly to business case stage – the final OBC package of measures for assessment at the next stage of the study can now be confirmed, overpage.

Table 15-6: Final OBC Package

Option Ref	Description
AT4	Implement measures to give active travel users priority over Burnside Drive when using the shared use path on Riverview Drive
AT13	Provide a formal pedestrian crossing point to the north of the A947/Riverview Drive Roundabout to facilitate movements to the Formartine and Buchan Way
AT14	Provide a formal pedestrian crossing point to the east of the A947/Riverview Drive Roundabout
AT16	Implement formal pedestrian crossing facilities on the arms of the Riverview Drive/Stoneywood Road Roundabout
AT17	Implement signalised crossing facility on Victoria Street adjacent to Tesco
AT30[152]	Provide direct active travel link between Dyce Drive and Riverview Drive
AT32	Implement footways on the south side of the carriageway on Pitmedden Road
AT59	Widen the shared use path on the east side of the A947 to the north of Riverview Drive
AT60	Provide continuous footways on Riverview Drive for the duration of the route
O15	Introduce placemaking and gateway features on Victoria Street
AT35a	Implement improvements to develop a mixed traffic street (which allows for safe, on-road cycling) on the local road network to the west of the A947, incorporating Bankhead Road, Greenburn Road and Millhill Brae
AT41a/b	Improve active travel access to the retail park at the Bucksburn Roundabout
O10	Review layout of the A947/McDonalds access road junction
AT31	Improve active travel links between the Riverside Path and housing within Dyce
AT33	Provide improved active travel links between Dyce Rail Station and the A947 and the eastern section of Dyce, particularly along Station Road
AT61a	Implement package of active travel measures on Victoria Street
O2	Review the layout of the Victoria Street/Skene Place Junction
O26	Implement one-way restrictions for general traffic on Victoria Street
AT51	Implement with-flow segregated cycleway on Old Meldrum Road
O7	Review the layout of the A947/Stoneywood Road Junction at Co-Op/Marks and Spencer
O8	Review the layout of the A947/Stoneywood Brae Junction
AT48a[153]	Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North
AT58	Implement shared use path on Dyce Drive between the A947 and Kirkhill Industrial Estate to the north of Aberdeen International Airport

[152] Option AT30 is effectively delivered through the combination of Options AT13, AT14 and AT59. Should one or more of these options not progress within the package of measures, Option AT30 would be subject to reliance on existing active travel facilities and its accessibility and overall value to users would be reduced.
[153] Should Option AT48a not progress to implementation, Options AT4 and AT60 could still be considered to offer value in isolation and should still be differentiated as standalone options.

Two options initially conceived for direct inclusion in the OBC at the outset of the study (i.e. as part of Table 1), will now **not** feature in the OBC:

- Option AT8 (Reconfigure the Auchmill Road/Old Meldrum Road junction to improve connections for pedestrians and cyclists) – junction proposals at this location will be progressed and consulted on as part of the A96 corridor study design with the A947 study proposals for Old Meldrum Road (Option AT51) tying-in to what emerges from the A96 appraisal.

- Option AT19 (Implement pedestrian crossing facilities at the Old Meldrum Road/Mugiemoss Road Junction) – pedestrian crossing facilities implemented as part of the Barratt Homes development along Mill Drive have superseded the requirement for this option in the study.

In addition, the following options from Table 1 will also not feature in the OBC having been subject to work as part of this study, with the outcomes now with ACC to further consider:

- Option AT20 (Conduct a footway review throughout the study area, identifying gaps in provision and considering the width and surfacing of existing footways).

- Option AT68 (Conduct a review of wayfinding signage throughout the study area).

- Option O11 (Undertake a review of parking arrangements on Victoria Street).

Furthermore, it was noted in Section 4.5 of this report that while Options AT10, AT11 and AT12 could be delivered as ‘quick wins’, on-road cycling infrastructure is not shown to influence modal shift and therefore it is considered that segregated cycling infrastructure should be promoted as part of this study. However, these options were noted as providing interim opportunities to improve on-road cycling infrastructure in advance of further consideration of segregation in the study area. With the Detailed Appraisal now complete – and Option AT48a (Implement active travel improvements to support highest practicable level of service on the A947 between the Bucksburn Roundabout and Riverview Drive Roundabout North) moving forward to the OBC stage – it should be highlighted that advisory cycle lane improvements would be superseded by implementation of a segregated cycleway as part of Option AT48a.

On this basis, it is concluded that Options AT10, AT11 and AT12 are no longer required as ‘quick win’ projects for delivery by ACC; although this would be subject to implementation of improvements to the level of service on the study corridor, including along Riverview Drive and on Stoneywood Road (at the Stoneywood Park junction), which would cover the scope of the improvements proposed by Options AT10/11/12.

15.3 Summary

This report has set out the outcomes of the appraisal of the ‘Table 2’ options under consideration in the A947 Multi-Modal Corridor Study. This has facilitated the identification of a preferred package of measures for the OBC.

The OBC package will now be assessed in terms of the Strategic, Socio-Economic, Financial, Commercial and Management cases – these will be provided to ACC under separate cover.