

## **16 Pedestrians, Cyclists, Equestrians and Community Effects**

This chapter identifies key routes used by pedestrians, cyclists and equestrians, and the principal community facilities that are accessed. It then describes the impacts of the proposed scheme on those journeys and outlines measures for avoiding or mitigating these impacts wherever possible.

As a result of the incorporation of mitigation proposals into the AWPR Northern Leg scheme design, access along all paths severed would be maintained, however the resultant diversions to journeys would result in some adverse impacts on pedestrians, cyclists and equestrians. Users would also experience some adverse impacts in terms of amenity value and community severance.

### **16.1 Introduction**

- 16.1.1 This chapter provides an assessment of the impact of the proposed scheme on journeys made by pedestrians, cyclists and equestrians in the Northern Leg study area. For ease of reference the term 'pedestrians and others' and 'Non-Motorised Users' (NMUs) are used to describe this group. Impacts on vehicle travellers are also considered where this is considered to be relevant.
- 16.1.2 In accordance with DMRB (Volume 11, Section 3, Part 8), the assessment of impacts on pedestrians and others focuses on three main aspects:
- changes in journey lengths and times;
  - the effect on the amenity value of journeys; and
  - changes in existing and new severance of links with community facilities.
- 16.1.3 Routes used by pedestrians and others are important because they can provide:
- access to local countryside and more remote areas on foot, bike or horse;
  - opportunities for long-distance travelling;
  - safe, non-motorised access to shops, work and school; and
  - opportunities to integrate access and land management.
- 16.1.4 The use of paths can help to improve health, reduce social exclusion, and unlike other modes of transport generally has no cost (i.e. fuel, travel tickets etc). A good path network can also encourage visitors to enjoy the outdoors and to visit places of landscape, historical and wildlife interest, therefore encouraging financial expenditure which supports the local rural economy. Well planned paths can potentially assist landowners and farmers to successfully integrate recreational use with land management operations.

### **16.2 Approach and Methods**

- 16.2.1 For the purposes of journey length and amenity value assessments, the study area was defined as a corridor 500m to each side of the centre of the proposed Northern Leg scheme alignment as shown on Figures 16.1a-g. For community severance assessment, the study area was defined to include catchment areas of community facilities and recreational areas potentially affected by the AWPR Northern Leg or related traffic changes in the wider area.
- 16.2.2 The assessment of impacts on pedestrians and others was undertaken through:
- potential impacts: assessment of any likely changes to the key journey parameters as a result of the proposed scheme, with respect to journey length, amenity and community severance prior to mitigation;
  - mitigation design: incorporating mitigation design through an iterative process, in the form of diversions, overbridges and underpasses; and

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- residual impacts: assessment (using the same method as above) of the residual impacts based on the mitigation proposals incorporated into the design.

#### Baseline Data Collection

16.2.3 Baseline data were collated from the following sources:

- desk based review to identify key community facilities within the study area and their catchment areas, and identification of key routes crossed by the proposed scheme and their journey times;
- site surveys to confirm key community facilities and routes used by pedestrians and others;
- liaison with consultees including Aberdeen City Council, Aberdeen Cycle Forum, Aberdeen Countryside Project, Aberdeenshire Council, Aberdeen and Aberdeenshire Local Outdoor Access Forums, Aberdeen and Aberdeenshire Community Councils, British Horse Society, Cyclists' Touring Club, Ramblers Association, Scotways, SNH and Sustrans (a full list of Consultees is provided in Chapter 6);
- review of North East Scotland Together (NEST) Aberdeen and Aberdeenshire Structure Plan 2001 – 2016; Finalised Aberdeenshire Local Plan (2002)<sup>1</sup> and Proposed Modifications (2005); The Finalised Aberdeen Local Plan – Green Spaces – New Places (2004); Aberdeen's Strategy for Access to the Outdoors (SNH) and the SNH Handbook on Outdoor Access Impact Assessment; and
- as advised by DMRB, origin and destination surveys were undertaken to establish travel patterns. Winter and summer surveys were carried out to provide a snapshot of the potential for seasonal variation in numbers, and current legislation relevant to access provision for pedestrians and others.

16.2.4 At the time of data collection and impact assessment, neither Aberdeen City nor Aberdeenshire councils had yet published core path networks (see paragraph 16.2.34). All paths, tracks, minor and major roads, and 'navigable' watercourses with the potential of being impacted by the proposed scheme were therefore included in this assessment, regardless of whether they were Rights of Way (ROW), possible core paths or farm access tracks.

#### Pedestrian, Cyclist and Equestrian Counts

16.2.5 Pedestrian, cyclist and equestrian origin/destination surveys, involving manual counts and interviews, were undertaken on behalf of Jacobs by The Paul Castle Consultancy (December 2004) and Count On Us (August/September 2005). The results of these surveys are used as appropriate within this assessment, and provided in full in Appendices A16.1 (Winter surveys) and A16.2 (Summer surveys). Winter and summer surveys were carried out to provide a snapshot of the potential for seasonal variations.

16.2.6 Information from both the interview and count surveys provided a snap-shot of current pedestrian and others movements, in terms of mode of travel, type of user, and the frequency and direction of path usage. An assessment was made of the distance and duration of these journeys to give baseline conditions.

16.2.7 Counts were taken at the sites shown on Figures 16.1a-g for key routes considered likely to be affected by the proposed scheme. Each site was surveyed between 07:00 and 19:00, on one weekday and one weekend day. The results indicated a snapshot of baseline trends rather than long term usage data.

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<sup>1</sup> The Finalised Aberdeenshire Local Plan (2002 and Modifications 2004) was adopted in June 2006, subsequent to the completion of the majority of the assessment of NMU inputs. However, during finalisation of Chapter 19, a review of the 2006 Adopted Plan and of the statements made within this chapter was undertaken, and no requirement for changes to the assessment was identified.

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- 16.2.8 A number of sites were relocated for the summer counts as information from winter counts had indicated low usage. Additional sites were also added during the summer surveys in order to gather more information on movements. Table 16.5 lists site locations during both winter and summer surveys. Both surveys were undertaken based on the AWPR proposals that existed prior to December 2005 when the announcement was made to progress the current proposed scheme (refer to Chapter 3: Alternatives Considered). However, as the Northern Leg route corridor remained largely unchanged by this announcement, the results of the pedestrian, cyclist and equestrian surveys are still considered to be relevant.
- 16.2.9 Interview-based surveys were undertaken in parallel with the manual count surveys for summer only. During interviews, respondents were asked questions relating to their journey, including mode of travel (i.e. pedestrian, cycle, equestrian), origin, destination, purpose and whether or not it was one way or return. Where respondents were travelling as a group, only one member was surveyed. In accordance with DMRB, 'person type' for the surveys was defined and categorised as Adult, Child (under 16 years), Elderly (over 60 years) and Disabled. For the purposes of this assessment, sensitivity of receptors is defined in terms of vulnerable and non-vulnerable groups. Vulnerable groups are defined as Child, Elderly and Disabled. Non-vulnerable groups are defined as Adults, Equestrians and Cyclists.

#### **Impact Assessment**

##### Journey Length (Distance and Time)

- 16.2.10 An assessment was made of the changes in journey lengths caused by diversions and closures of pathways as a result of the proposed scheme. All paths crossed by the proposed scheme were identified as potential 'conflict points', which are shown on Figures 16.1a-g.
- 16.2.11 DMRB provides a method for determining the number of travellers and journey lengths. The method requires the identification on a map of key community facilities and their catchment areas. The number of users can then be estimated using the assumption that people would travel to the nearest facility. Journey lengths can be measured on the map, and an estimate of journey time can then be calculated using average journey speeds and distance travelled.
- 16.2.12 Due to the rural nature of the study area, woodland areas may represent community recreational facilities and links to them are considered important and have been included in the assessment. However, the assessment takes into account the recreational nature of the journey, and therefore the criteria provided in Table 16.1 may not strictly apply.
- 16.2.13 In accordance with DMRB, the average journey speeds for users has been assumed to be 5 km/hr for non-vulnerable pedestrians (i.e. able bodied adults), 3 km/hr for vulnerable pedestrians (i.e. elderly and disabled persons and children), 10 km/hr for equestrians and 20 km/hr for cyclists (assuming the latter two categories to be non-vulnerable). In order to assess the magnitude of impact on local vehicle travellers, it is assumed they travel at a speed of 50km/hr. These different categories of users define the sensitivity of the environmental receptors for this assessment.
- 16.2.14 The magnitude criteria are defined by change in journey length for pedestrians, in accordance with DMRB, ranging from Neutral (no change), Negligible (<150m), Minor (150-250m), Moderate (250-500m) to Major (>500m). The magnitude criteria for other users are estimated, based on the DMRB criteria for pedestrians. The criteria assume an increase in journey length has a negative impact on users, indicating the shortest route is preferable.
- 16.2.15 Impact magnitude and receptor sensitivity are combined to determine the significance of impact. Table 16.1 provides an example matrix, although all impacts were individually assessed on a case-by-case basis, taking into account factors such as original journey length, usage and purpose. This includes consideration of the fact that, where journeys are predominantly recreational, moderate increases in journey length may be considered as beneficial by users in some cases.

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- 16.2.16 The impact significance assigned by DMRB for community severance effects on pedestrians has been extrapolated for other NMU types and vehicles.

**Table 16.1 – Significance Criteria for Changes in Journey Length**

Sensitivity	Magnitude				
	Neutral	Negligible	Minor	Moderate	Major
	No change	<150m	150-250m	250-500m	>500m
<b>Very High</b> Vulnerable Pedestrians	Negligible	Slight	Moderate	Major	Severe
<b>High</b> Non-vulnerable Pedestrians	Negligible	Slight	Slight	Moderate	Major
<b>Medium</b> Equestrians	Negligible	Negligible	Slight	Slight	Moderate
<b>Low</b> Cyclists	Negligible	Negligible	Negligible	Slight	Moderate
<b>Negligible</b> Vehicles	Negligible	Negligible	Negligible	Negligible	Slight (>2000m)

#### Amenity Value

- 16.2.17 The amenity value of a journey is defined in DMRB as ‘the relative pleasantness of a journey’. This relates in particular to the exposure of pedestrians and others to traffic, and the associated factors of noise, air quality, visual and safety.
- 16.2.18 Amenity value is a subjective issue and it is acknowledged that any changes in amenity value resulting from a new road would therefore also be subjective. However, for the purposes of assessment, it has been assumed that where pedestrians and others would experience a reduction in traffic or road-related noise, or visual impact or improvement in air quality, there would be a perceived improvement in amenity value. Conversely, an increase in any such traffic or road-related impacts or reduction in safety has been assumed to constitute a reduction in amenity value. It is important to note that traffic flows provided in this chapter are for a small section of the selected road only. Traffic flows along the full length of the road are likely to vary due to junctions.
- 16.2.19 For the purposes of assessment of change to amenity value, all receptors (i.e. both vulnerable and non-vulnerable groups) were considered to be of high sensitivity. Impact significance was assigned for each receptor qualitatively, using professional judgement and taking into account the magnitude of change with respect to existing views, air quality, traffic flows and noise levels and the sensitivity of receptors. Full visual, air quality and noise assessments for the Northern Leg are reported in Chapters 12 (Visual), 14 (Air Quality) and 15 (Traffic Noise and Vibration).
- 16.2.20 The significance of impact criteria for change in amenity are described in Table 16.2.

**Table 16.2 – Significance Criteria for Change in Amenity**

Significance	Magnitude
<b>Substantial</b>	Where there is a Substantial change in the existing view and/or air quality and/or a Substantial adverse change (increase) in noise levels.
<b>Moderate</b>	Where there is Moderate or noticeable change in the existing view and/or air quality and/or a Moderate adverse change (increase) in noise levels.
<b>Slight</b>	Where there is Slight or barely perceptible change in the existing view and/or air quality and/or a Slight adverse change (increase) in noise levels.
<b>Negligible</b>	Very little or no discernable change from baseline conditions equating to a no-change situation.

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#### Community Severance

- 16.2.21 Community severance is defined in DMRB as 'the separation of residents from facilities and services they use within their community caused by new or improved roads or by changes in traffic flows'.
- 16.2.22 The assessment of community severance relates to the impact on residents resulting from changes in routes and journey lengths and/or times. The construction of new roads or even relatively minor changes to existing roads can result in significant changes to local journey lengths or travel patterns within a community. Roads may, for example, act as a barrier deterring people from using certain community facilities, or conversely, a diversion of road traffic away from a busy road may make an existing road easier to cross and thereby reduce community severance.

#### *Existing Severance*

- 16.2.23 Existing severance is considered as the severance of communities from facilities such as schools and bus stops as a result of the existing road network.
- 16.2.24 Average Annual Daily Traffic (AADT) from 2005 was assessed against projected AADT for year of opening, with and without the proposed scheme, in order to assess relief from existing severance. DMRB criteria state that for built up areas, an approximate 30% reduction in traffic would constitute a Slight relief from severance, a 30% to 60% reduction constitutes a Moderate relief, and a reduction of over 60% constitutes a Substantial relief from severance. In rural areas, this changes to a 60-75% reduction for Slight relief, 75-90% for Moderate relief and >90% reduction for Substantial relief.

#### *New Severance*

- 16.2.25 New severance is considered as the severance of pedestrians and others from community facilities such as schools, bus stops and recreational areas as a result of the proposed scheme.
- 16.2.26 As discussed in DMRB, severance is assessed using a three point significance scale of Slight, Moderate and Severe as shown in Table 16.3. The significance criteria take into consideration the magnitude of impact in terms of predicted traffic flow on the new road, method of crossing and increase in journey lengths. Cyclists and equestrians are less susceptible to severance because they can travel more quickly than those on foot, although they may still be deterred from making journeys which require them to negotiate additional roads and especially junctions. The sensitivity of receptor is therefore not explicitly identified in Table 16.3. Note also that the criteria are based on post mitigation design and therefore the assessment is described in the Residual Impacts section.
- 16.2.27 Baseline traffic flows are based on 2005 traffic figures. Projected traffic flows are presented as AADT for the year the proposed scheme opens with and without the proposed scheme (i.e. do-minimum case) in place.

**Table 16.3 – Significance Criteria for New Severance**

<b>Significance</b>	<b>Magnitude</b>
<b>Slight</b>	<ul style="list-style-type: none"><li>• Pedestrian at-grade crossing of a new road carrying below 8,000 vehicles per day (AADT); or</li><li>• A new bridge will need to be climbed or a subway traversed; or</li><li>• Journeys will be increased by up to 250m.</li></ul>
<b>Moderate</b>	<ul style="list-style-type: none"><li>• Pedestrian at-grade crossing of a new road carrying between 8,000 – 16,000 vehicles per day (AADT) in the opening year; or</li><li>• Journeys will be increased by 250-500m.</li><li>• Two or more of the hindrances set out under 'Slight' applying to single trips; or</li></ul>
<b>Severe</b>	<ul style="list-style-type: none"><li>• Pedestrian at-grade crossing of a new road carrying over 16,000 vehicles per day (AADT) in the opening year; or</li><li>• An increase in length of journeys of over 500m; or</li><li>• Three or more of the hindrances set out under 'Slight' or two or more set out under 'Moderate'.</li></ul>

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##### Countryside Access

- 16.2.28 Given the rural nature of the study corridor, an impact assessment using SNH methodology for countryside access was conducted (SNH, 2005). The types of outdoor access facilities within the corridor cover both area based (e.g. parks, reserves, local open spaces and inland lochs and reservoirs) and linear access (e.g. core paths, routes, ROW) types. Linear access outdoor facilities and access to the area based facilities are assessed in detail in other sections of this assessment; consideration of Countryside Access therefore concentrates on area based facilities.
- 16.2.29 The assessment took into account the differing issues and objectives for outdoor access facilities. In accordance with SNH guidance, the method for assessing impact on pedestrians and others in terms of enjoying area based facilities is assessed by considering severance, diversions, and amenity value, providing a qualitative assessment.

##### **Mitigation Design**

- 16.2.30 The development of mitigation is based on the PAN 58 approach as described in Chapter 5 (Overview of Assessment Process) to meet the intentions of the relevant legislation as described below, and presented in detail in Section 16.5. In addition to the mitigation proposed specifically for pedestrians and others, other chapters should be referred to for mitigation that will ameliorate impacts on users further. Chapter 7 (Land Use) should be referred to for proposed farm accommodation bridges; Chapter 10 (Ecology and Nature Conservation) provides proposed wildlife bridge locations and ecological planting; Chapter 11 (Landscape) provides proposed planting mitigation and Chapter 18 (Disruption Due to Construction) provides proposed accommodation bridges (non agricultural). Legislation, as detailed below, affirms rights to pedestrians and others to be able to use these in a responsible manner.

##### Land Reform (Scotland) Act 2003

- 16.2.31 Until recently, legal access to the Scottish countryside has existed under 'The Countryside (Scotland) Act 1967', in the form of de jure and de facto access; the former relating to prescriptive and secure access such as ROW, the latter being responsible access. Both forms of access have encountered problems, with conflict between landowner and the need of the public to travel through the countryside leading to expensive court cases, inconsistent classifications of ROW and lack of ROW for horseriders and cyclists. De facto access lacks security of use as rights of access can be unclear, and suffer from a lack of promotion and signposting.
- 16.2.32 The 'Land Reform (Scotland) Act 2003 Part 1' came into effect in February 2005 and establishes statutory rights of responsible access on and over most land, including inland water. This new legislation offers a general framework of responsible conduct, both for those exercising rights of access and for landowners. The Act gives local authorities new powers and duties to uphold and facilitate responsible access rights. This includes the requirement to prepare a plan for a path network which will include a list of core paths and will be known as a 'core path network'. The core path network should provide for all forms of recreational access including cyclists, equestrians and walkers.
- 16.2.33 Chapter 5, Section 13 of the Act states that 'it is the duty of the local authority to assert, protect and keep open and free from obstruction or encroachment any route, waterway or other means by which access rights may reasonably be exercised'.
- 16.2.34 Aberdeenshire Council and Aberdeen City Council are currently preparing the Core Path Networks, with the draft proposals expected to be submitted in early 2008. At time of writing, core path information was not available. The mitigation proposals to address access issues in this assessment have therefore been designed based on existing path networks. However, through regular discussions with Aberdeenshire Council and Aberdeen City Council, the scheme proposals have been designed to protect the potential for access provision; and to maintain current access either by an overbridge, underpass or a diversion to the nearest access provision across the proposed scheme.

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16.2.35 Where overbridges and underpasses are not specifically designated for multi-use including cyclists, equestrians and walkers, Chapter 1, Section 1 of the Act notes that these crossings may be used by the public using the countryside in a responsible manner, and defines public responsibility in this regard.

#### Disability Discrimination Act (1995)

16.2.36 Under the Disability Discrimination Act (1995), a disabled person is an adult or child who has, or has had in the past, a physical or mental impairment which has a Substantial and long term (i.e. at least 12 months) adverse effect on their ability to carry out normal day to day activities. This includes people with physical and sensory disabilities, learning difficulties and mental illness.

16.2.37 The Act makes it unlawful for service providers to treat disabled people less favourably than they would treat other people, for a reason related to their disability, when offering public services and facilities, thereby including paths and trails.

16.2.38 The provisions of the Act are consistent with SNH's policy of promoting 'access for all', under which access to the countryside should be barrier free and, where a structure is necessary, the 'least restrictive option' should be adopted. This means that access structures should accommodate the needs and interests of as wide a range of legitimate users as possible.

16.2.39 In accordance with the Act, access structures in the form of overbridges and underpasses, have taken into account potential barriers such as gradient, verge width, radius of bends and surfacing. Details of these provisions are detailed in Section 16.5.

#### **Residual Impact Assessment**

##### Journey Length, Amenity Value and Community Severance

16.2.40 Residual impacts were identified following the same methodology as described above for identification of potential impacts for journey lengths, amenity value and community severance. However, the residual impact on pedestrians and others is assessed by taking into account the mitigation proposals as described in Section 16.5.

##### Countryside Access

16.2.41 An assessment of the impact on countryside access in accordance with the methodology described in Appendix 5 of the SNH Handbook of Environmental Impact Assessment (2005), has been included to consider access to countryside facilities. The assessment is presented under the Residual Impact Assessment section because it takes proposed mitigation into consideration.

16.2.42 The potential effects of a project on countryside access interests will usually depend on the following main considerations:

- The type of countryside access facility;
- The type of project, including its nature, scale, location, duration etc; and
- The nature of recreation practised at the site or facility.

16.2.43 Using the defined types of outdoor facilities and types of outdoor access impacts provided by the SNH Handbook, this chapter presents only a descriptive assessment of the impacts and proposed mitigation.

#### **Limitations to Assessment**

16.2.44 The assessment presented in this chapter and its associated figures is subject to the following limitations and assumptions:

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- The assessment is based on information provided during the consultation process. For example, the paths described may no longer be present, and others may have been missed;
- DMRB does not provide criteria for assessing the significance of change in journey length for equestrians and cyclists. The criteria provided for pedestrians are therefore used as a basis, in conjunction with professional judgement to complete Table 16.1; and
- Traffic data were not available for all the roads in the study area as the traffic model was developed at a strategic level given the large area which it had to cover.

### **16.3 Baseline Conditions**

16.3.1 The study area is predominantly characterised by rural fields and woodlands with scattered farms connected to small settlements via a network of minor roads and tracks. The types of key routes used by pedestrians and others range from informal, grassed-over footpaths to stony farm access tracks to minor roads.

16.3.2 Many routes are identified in the Scottish Paths Record and in the proposed core path network currently being developed by the Local Authorities (refer to paragraph 16.2.34), and a number of them are also recognised as pedestrian ROW in the National Catalogue of Rights of Way. The introduction of new access legislation (Land Reform (Scotland) Act 2003) will not affect the status of existing ROW but does not guarantee that these will be incorporated into core path networks.

#### **Local Vehicular Traffic**

16.3.3 Vehicular traffic currently utilises the following main routes: the A96 (T) from the west, the A947 from the north and the A90 (T). A network of smaller, mostly unclassified roads supplement the main road routes, serving isolated settlements, businesses and farmsteads, in addition to daily commuters into the city centre.

#### **Key Community Facilities**

16.3.4 Community facilities within the 500m study area are shown in Figures 16.1a-g and 16.2 a-d, and include:

- schools: Scottish Agricultural College (SAC) Craibstone Campus, Dyce football grounds, Cordyce School and Blackdog Nursery;
- parks, recreational areas, sport centres etc: Craibstone Golf Centre, Newmacher Golf Club, Kirkhill Forest (includes Standingstones, Bogenjoss and East Woodlands Wood), Little John's Wood, rural areas around Brimmond Hill and Elrick Hill, Tyrebagger Hill Recumbent Stone Circle, River Don, Formartine and Buchan Way, Red Moss, Lily Loch/ Corby Loch/ Bishops Loch, Blackdog Community Woodland and Seaview Caravan Park;
- two hotels next to Aberdeen airport;
- bar/restaurant at Dyce;
- bus services;
- Parkhill Livery and Cattery; and
- Parkhill Garden Centre.

16.3.5 As shown on Figures 16.1a-g, most community facilities in the study area can be found in the larger settlements of Kingswells, Pitmedden and Potterton. The number of users for those facilities can therefore be estimated to be proportional to the settlement population (as shown below), assuming that people will use the nearest available facility. Scotland's population is estimated to rise by only 0.8% by 2011 (General Register Office for Scotland), therefore the 2004 Census population estimates below provide a suitable proxy for the proposed scheme year of opening:

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- Kingswells: 4360;
- Pitmedden: 1330; and
- Potterton: 790.

16.3.6 During the summer surveys, bus stops were included, to provide data regarding the usage of public transport (B22, B38, B39, B31, B34 and B35). The locations of bus stops are also provided in Figures 16.1a-g.

16.3.7 Primary and secondary school catchment areas are listed below and illustrated on Figures 16.2a-d. These are listed separately from the community facilities mentioned above as they lie outwith the 500m study area.

#### Primary Schools

- Newhills;
- Stoneywood;
- Dyce; and
- Scotstown.

#### Secondary Schools

- Bankhead Academy;
- Dyce Academy; and
- Bridge of Don Academy.

16.3.8 Further details on community facilities and land used by the community are provided in Chapter 7 (Land Use).

#### **Countryside Access**

16.3.9 The study area also includes water features (e.g. lakes, streams/rivers) and large forested areas which provide recreational use, as shown on Figures 16.2 a-d and include:

- Brimmond Hill/ Elrick Hill;
- Tyrebagger Hill Recumbent Stone Circle;
- Craibstone;
- Kirkhill Forest/ Standingstones Wood;
- East Woodlands;
- River Don;
- Formartine and Buchan Way;
- Little John's Wood;
- Red Moss;
- Lily Loch/ Corby Loch/ Bishops Loch; and
- Blackdog Community Woodland.

16.3.10 Kirkhill Forest contains a large network of pathways for pedestrians, cyclists and equestrians and is considered to be regionally important due its recreational and ecological value. Tyrebagger Hill Recumbent Stone Circle is located near to the network of paths at Kirkhill Forest (Refer to Cultural Heritage: Chapter 13, and Figure 13.1c). Craibstone also contains a network of pathways used by

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recreational users and students/staff at the Scottish Agricultural College. Many of these paths form part of the Fourhills Walks, which is a series of routes connecting areas in Kirkhill Forest with Brimmond Hill and Elrick Hill. The Formartine and Buchan Way is a very popular recreational route with pedestrians, cyclists and equestrians, as indicated by the survey results in Table 16.6. Blackdog Community Woodland contains a network of recreational pathways for pedestrian use. Access to all these recreational areas is listed below.

#### **Key Routes**

- 16.3.11 Current journey distances for the key routes were estimated from plans, and the journey times were calculated using the speed of travel provided in paragraph 16.2.13. The results are provided in Table 16.4.
- 16.3.12 Within built-up areas such as Potterton and Blackdog, pedestrian pathways are provided alongside most roads, including the main roads. Access to facilities within these settlement areas are provided by these pathways. Away from the built-up areas, the main roads are not well used by pedestrians, as roadside footpaths are not provided.

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**Table 16.4 Estimated Baseline Journey Lengths**

Key Routes	Existing Route Type	User Group	Current Journey Time (mins, secs)	Current Journey Length (m)
Path from north Kingswells to Hillhead of Derbeth	ROW	Vulnerable pedestrians	10 mins	500
		Non-vulnerable pedestrians	6 mins	500
Path from Newton to Brimmond Hill	Footpath	Proposed Route (North Kingswells Junction)	-	-
		Vulnerable pedestrians	10 mins, 24 secs	520
		Non-vulnerable pedestrians	6 mins, 14 secs	520
		Possible Route B(N) (Kepplestone Overbridge)		
		Vulnerable pedestrians	10 mins, 24 secs	520
		Non-vulnerable pedestrians	6 mins, 14 secs	520
		Possible Route A(S) (North Kingswells Junction)	-	-
		Vulnerable pedestrians	10 mins, 24 secs	520
Path from Craibstone SAC to Parkhead/ Golf Centre	Footpath	Vulnerable pedestrians	9 mins, 24 secs	470
		Non-vulnerable pedestrians	5 mins, 38 secs	470
Path from Craibstone to Chapel Croft	Footpath	Vulnerable pedestrians	18 mins	900
		Non-vulnerable pedestrians	10 mins, 48 secs	900
Walton Road	ROW	Vulnerable pedestrians	9 mins	450
		Non-vulnerable pedestrians	5 mins, 24 secs	450
Path from Howemoss to Standing Stones Wood	Footpath	Proposed Route (via Shell pipeline structure)	-	-
		Vulnerable pedestrians	18 mins	900
Path to Bogenjoss/ Kirkhill Forest	Footpath/ Equestrian Route	Non-vulnerable pedestrians	10 mins, 48 secs	900
		Vulnerable pedestrians	12 mins	600
		Non-vulnerable pedestrians	7 mins, 12 secs	600
		Equestrians	3 mins, 36 secs	600
Path to Kirkhill Forest	Footpath/ Equestrian Route/ Cycleway	Vulnerable pedestrians	23 mins, 12 secs	1160
		Non-vulnerable pedestrians	13 mins, 55 secs	1160
		Equestrians	6 mins, 58 secs	1160
		Cyclists	3 mins, 29 secs	1160
Path to North Kirkhill Forest	Footpath and ROW	Vulnerable pedestrians	26 mins	1300
		Non-vulnerable pedestrians	15 mins, 36 secs	1300
Formartine and Buchan Way (where it would cross the proposed scheme)	Footpath/ Equestrian Route/ Cycleway	Vulnerable pedestrians	20 mins	1000
		Non-vulnerable pedestrians	12 mins	1000
		Equestrians	6 mins	1000
		Cyclists	3 mins	1000
Formartine and Buchan Way (where it would cross the A947 link road)	Footpath/ Equestrian Route/ Cycleway	Vulnerable pedestrians	16 mins, 48 secs	840
		Non-vulnerable pedestrians	10 mins, 48 secs	840
		Equestrians	5 mins, 2 secs	840
		Cyclists	2 mins, 31 secs	840

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Key Routes	Existing Route Type	User Group	Current Journey Time (mins, secs)	Current Journey Length (m)
Meadowhead	ROW	Proposed Route A (E)	-	-
		Vulnerable pedestrians	21 mins, 24 secs	1070
		Non-vulnerable pedestrians	12 mins, 50 secs	1070
		Proposed Route B (W)	-	-
		Vulnerable pedestrians	19 mins, 36 secs	980
		Non-vulnerable pedestrians	11 mins, 36 secs	980
Laingseat Road	Footpath	Vulnerable pedestrians	20 mins	1000
		Non-vulnerable pedestrians	12 mins	1000
Blackdog Community Woodland	Footpath	Vulnerable pedestrians	20 mins	1000
		Non-vulnerable pedestrians	12 mins	1000

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##### Key Journey Parameters

- 16.3.13 The following information is based on pedestrian, cyclist and equestrian surveys undertaken using the approach discussed in Section 16.2.
- 16.3.14 Counts were undertaken at 23 selected sites (Sites 19a – Site 39) between North Kingswells and the A90 Blackdog as shown in Table 16.5 and on Figures 16.1a-g. It should be noted that the numbering of these sites commences at 19a, as counts with numbering lower than this related to the previous AWPR Murtle Route proposals and have therefore been excluded from this assessment. Interviews were undertaken at Sites 19a, 20a, 20b, 20c, 21 and 24 for the summer only.

##### Origin and Destination Surveys

- 16.3.15 The results of the origin and destination surveys for each site are presented in Table 16.6 and a summary of the results are provided below. A total of 993 people were recorded over the winter and summer survey days.
- 16.3.16 During the winter survey, the highest level of pedestrian activity was recorded at Site 27 (Along the Formartine and Buchan Way), 28a/b (B977/ Formartine and Buchan Way junction), Sites 24 and 25 (Paths on Edge of Kirkhill Forest), and B34 (Bus Stop on southbound carriageway of A 90). A total of 258 pedestrians were recorded over the winter survey period.
- 16.3.17 During the summer survey, the highest level of pedestrian activity was recorded at Site 27 (Along the Formartine and Buchan Way), 25 (Paths on Edge of Kirkhill Forest), 24 (Paths on Edge of Kirkhill Forest), 36 (A90 access to Blackdog Industrial Estate) and B31 (Junction of Resser Way and A90 Trunk Road (northbound carriageway)). A total of 375 pedestrians were recorded over the summer survey period.
- 16.3.18 During both the winter and summer surveys, the highest level of cyclist activity was recorded at Sites 27 (Along the Formartine and Buchan Way), 28 (B977 where it is crossed by the Formartine and Buchan Way) and 22 (Junction on the A96 opposite Marshalls Trailers). A total of 49 cyclists were recorded during the winter survey and 297 during the summer survey period.
- 16.3.19 During both the winter and summer surveys, the highest level of equestrian activity was recorded at Sites 27 (Along the Formartine and Buchan Way), 24 (Paths on Edge of Kirkhill Forest) and 25 (Paths on Edge of Kirkhill Forest). A total of seven equestrians were recorded during each of the winter and summer surveys.
- 16.3.20 The total number of pedestrians and others recorded was 993, 32% during the winter surveys and 68% during the summer surveys. In total, the surveys recorded 64% pedestrians, 35% cyclists and 1% equestrians.

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**Table 16.5 – Survey Site Locations**

<b>Site Location</b>	<b>Site Description</b>	<b>Winter/Summer</b>
Site 19a	Junction of C89C Fairley Rd and access North of Dykeside	Summer only
Site 20	Junction of C89C Fairley Rd and access to Manse Cottage	Winter/ Summer
Site 20a	Junction of C89C Fairley Road and access to SAC campus	Summer only
Site 20b	Junction of C89C Fairley Road and access to SAC campus	Summer only
Site 20c	Junction of C89C Fairley Road and access to SAC campus adjacent to West Lodge	Summer only
Site 21	Junction of U53C Chapel of Stoneywood Road with access track (Walton Road) opposite Marshalls Trailers	Winter/ Summer
Site 22	Junction on A96 Trunk Road opposite Marshalls Trailers	Winter/ Summer
Site B22	Bus stop west of junction with A96 Trunk Road opposite Marshalls Trailers	Summer only
Site 23	Access path to Kirkhill Forest and Standing Stones Wood from Kirkhill Industrial Estate	Winter/ Summer
Site 24	Paths on edge of Kirkhill Forest	Winter/ Summer
Site 25	Paths on edge of Kirkhill Forest	Winter/ Summer
Site 26	Paths on edge of Kirkhill Forest	Winter/ Summer
Site 27	Along the Formartine and Buchan Way	Winter/ Summer
Site 28a	Count on the B977 where it is crossed by the F and B Way	Winter/ Summer
Site 28b	Count on the B977 where it is crossed by the F and B Way	Winter/ Summer
Site 29 (W)	Corby Loch path next to Lochgreens Cottage	Winter only
Site 29 (E)	Access to Corby Loch close to Backhill of Cranbog	Summer only
Site 30	Farm access path at junction with A90(T) opposite Blackdog Ind. Estate	Winter/ Summer
Site B31	Bus stop at Blackdog on A90(T) (southbound carriageway)	Winter/ Summer
Site B31	Junction of Resser Way and A90(T) (northbound carriageway)	Winter/ Summer
Site 32	footpath from B999 to Panmure Gardens	Winter only
Site 33	Pathways between Laingseat, Middleton and proposed Northern Leg	Winter only
Site B34	Bus Stop on southbound carriageway at Blackdog	Winter/ Summer
Site B35	Bus Stop on northbound carriageway at Blackdog	Winter/ Summer
Site B35	Bus stop on southbound carriageway south of Blackdog	Winter only
Site 36	Access to Blackdog Industrial Estate from A90(T)	Winter/ Summer
Site 37	Underpass running under A96(T)	Summer only
Site 37a	Pedestrian crossing of A96(T) adjacent to Mill of Craibstone Veterinary centre	Summer only
Site B38	Bus stop on eastbound side of A96(T) close to Mill of Craibstone Veterinary Centre	Summer only
Site B39	Bus stop on westbound side of A96(T) close to Mill of Craibstone Veterinary Centre	Summer only

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**Table 16.6 – Total Pedestrian and Others Activity**

Site No.	Site	Winter survey (November-December 2004)										Summer survey (August 2005)										Overall Total
		Cyclists			Pedestrians			Equestrians			Winter Total	Cyclists			Pedestrians			Equestrians			Summer Total	
		w/d	w/e	Total	w/d	w/e	Total	w/d	w/e	Total		w/d	w/e	Total	w/d	w/e	Total	w/d	w/e	Total		
19A	Junction of C89C Fairley Rd and access North of Dykeside Steading	-	-	-	-	-	-	-	-	-	-	9	5	14	0	1	1	0	0	0	15	15
20	Junction of C89C Fairley Rd and access to Manse Cottage	0	0	0	0	0	0	0	0	0	0	5	11	16	2	3	5	0	0	0	21	21
20A	Junction of C89C Fairley Rd and access to SAC Campus	-	-	-	-	-	-	-	-	-	-	0	4	4	0	7	7	0	0	0	11	11
20B	Junction of C89C Fairley Rd and access to SAC Campus	-	-	-	-	-	-	-	-	-	-	1	8	9	10	9	19	0	0	0	28	28
20C	Junction of C89C Fairley Rd and access to SAC Campus adjacent to West Lodge	-	-	-	-	-	-	-	-	-	-	0	1	1	10	4	14	0	0	0	15	15
21	Junction of U53C Chapel of Stoneywood Road with access track (Walton Road) opposite Marshalls Trailers	1	3	4	10	3	13	0	0	0	17	1	2	3	7	8	15	0	0	0	18	35
22	Junction on the A96 opposite Marshalls Trailers	1	3	4	3	14	17	0	0	0	21	15	6	21	6	4	10	0	0	0	31	52
*B22	Bus stop west of Junction A96 Trunk Rd opposite Marshalls Trailers	-	-	-	-	-	-	-	-	-	-	0	0	0	3	2	5	0	0	0	5	5
23	Access path to Kirkhill Forest and Standing Stones Wood from Kirkhill Industrial Estate	0	0	0	0	1	1	0	0	0	1	1	2	3	2	11	13	0	0	0	16	17
24	Paths on Edge of Kirkhill Forest	0	0	0	32	4	36	0	2	2	38	2	5	7	34	2	36	1	0	1	44	82
25	Paths on Edge of Kirkhill Forest	0	0	0	19	12	31	0	2	2	33	4	3	7	33	5	38	1	1	2	47	80
26	Paths on Edge of Kirkhill Forest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Along the Formartine and Buchan Way	7	7	14	10	11	21	0	3	3	38	21	128	149	27	15	42	0	4	4	195	233
28a 28b	B977 where it is crossed by the F and B Way	7	5	12	16	27	43	0	0	0	55	22	16	38	7	4	11	0	0	0	49	104
29	Corby Loch Path (west)	1	2	3	3	3	6	0	0	0	9	-	-	-	-	-	-	-	-	-	-	9

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Site No.	Site	Winter survey (November-December 2004)										Summer survey (August 2005)										Overall Total
		Cyclists			Pedestrians			Equestrians			Winter Total	Cyclists			Pedestrians			Equestrians			Summer Total	
		w/d	w/e	Total	w/d	w/e	Total	w/d	w/e	Total		w/d	w/e	Total	w/d	w/e	Total	w/d	w/e	Total		
29	Corby Loch Path (east)	-	-	-	-	-	-	-	-	-	-	0	7	7	2	0	2	0	0	0	9	9
30	Footpath across A90 opposite Blackdog	4	1	5	6	8	14	0	0	0	19	2	5	7	15	3	18	0	0	0	25	44
*B31	Bus Stop at Blackdog on A90 (Southbound carriageway)	4	0	4	14	8	22	0	0	0	26	-	-	-	-	-	-	-	-	-	-	26
*B31	Junction of Resser Way and A90 Trunk Rd (northbound carriageway)	-	-	-	-	-	-	-	-	-	-	0	0	0	15	10	25	0	0	0	25	25
32	Footpath from B999 to Panmure Gardens	0	0	0	4	3	7	0	0	0	7	-	-	-	-	-	-	-	-	-	-	7
33	Footpaths between Laingseat, Middleton and proposed scheme	0	0	0	2	1	3	0	0	0	3	-	-	-	-	-	-	-	-	-	-	3
*B34	Bus stop on south carriageway at Blackdog	2	1	3	21	13	34	0	0	0	37	0	0	0	29	7	36	0	0	0	36	73
*B35 (S)	Additional Bus Stop on southbound carriageway at A90	0	0	0	4	2	6	0	0	0	6	-	-	-	-	-	-	-	-	-	-	6
*B35 (N)	Bus stop on northbound carriageway at Blackdog	-	-	-	-	-	-	-	-	-	-	0	0	0	18	11	29	0	0	0	29	29
36	A90 access to Blackdog Industrial Estate	0	0	0	4	0	4	0	0	0	4	2	5	7	11	3	14	0	0	0	21	25
37	Underpass running under A96 Trunk Rd	-	-	-	-	-	-	-	-	-	-	0	1	1	5	9	14	0	0	0	15	15
37A	Pedestrian Crossing of A96 Trunk Rd adjacent to Mill of Craibstone Veterinary Centre	-	-	-	-	-	-	-	-	-	-	3	0	3	6	1	7	0	0	0	10	10
*B38	Bus stop on eastbound side of A96 Trunk Rd close to Mill of Craibstone Veterinary Centre	-	-	-	-	-	-	-	-	-	-	0	0	0	6	1	7	0	0	0	7	7
*B39	Bus stop on westbound side of A96 Trunk Rd close to Mill of Craibstone Veterinary Centre	-	-	-	-	-	-	-	-	-	-	0	0	0	6	1	7	0	0	0	7	7
Total		27	22	49	148	110	258	0	7	7	314	88	209	297	254	121	375	2	5	7	679	993

\* B-sites indicate bus stops that were surveyed for pedestrians using public transport

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Age Group and Vulnerability

- 16.3.21 Table 16.7 shows the numbers of survey respondents falling within each age/ vulnerability group.
- 16.3.22 The data show that the routes were used by a cross-section of age groups, although the majority of respondents were adults (92% and 88% over winter and summer respectively).
- 16.3.23 Children (under 16), the elderly (over 60) and the disabled are considered 'vulnerable', and made up approximately 6.7%, 3.9% and 0.2% respectively of those surveyed. Survey data indicated that the highest proportion of vulnerable respondents was recorded at Site 25 (paths on the edge of Kirkhill Forest).

**Table 16.7 – Age Groups of Survey Respondents**

Age/ vulnerability		Respondents – Winter Survey		Respondents – Summer Survey		Total Respondents for Winter and Summer Surveys	
		Number	%	Number	%	Number	%
Non-vulnerable	Adult	289	92	597	88.0	886	89.2
Vulnerable	Child	23	7	43	6.3	66	6.7
	Elderly	2	1	37	5.4	39	3.9
	Disabled	0	0	2	0.3	2	0.2
<b>Total</b>		<b>314</b>	<b>100</b>	<b>679</b>	<b>100</b>	<b>993</b>	<b>100</b>

Nature of Trip

- 16.3.24 Over half the journeys undertaken by survey respondents were return trips. Of the 35 pedestrians, cyclists and equestrians interviewed, 49% were undertaking one-way trips.

Purpose of Trip

- 16.3.25 The majority of journeys were undertaken for business purposes or returning home as shown in Table 16.8. The results indicate that, of the equestrians surveyed, all stated that they were returning home. However, it is assumed that they were returning home from recreational journeys.

**Table 16.8– Purpose of Journey**

Purpose	Summer Survey %		
	Pedestrians	Cyclists	Equestrians
Home	28	80	0
Recreation	7	0	100
Business	55	20	0
Education	3	0	0
Shopping	7	0	0
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

**Amenity Value**

- 16.3.26 Throughout the study corridor the baseline air quality levels have been measured and have been determined to be well within the minimum standards required (refer to Chapter 14: Air Quality) for details). Baseline (ambient) noise monitoring has been carried out at noise sensitive locations, the results of which are provided in Chapter 15 (Traffic Noise and Vibration).

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#### **Community Severance**

##### Existing Severance

- 16.3.27 Existing severance has been identified where pedestrians and others are currently separated from community facilities, including school catchment areas, as a result of the existing road network. AADT from 2005 is used to represent existing traffic volume.
- 16.3.28 The A96 (Figure 16.2b) currently creates severance of Bankhead Academy and Newhills Primary School catchment area by crossing the northern section in an east-west direction. The A96 also passes through Newhills Primary School catchment area. The A96 currently carries traffic volumes of 20,083 AADT.
- 16.3.29 The A947 (Figure 16.2b) currently creates severance between Pitmedden and Dyce, separating pedestrians and others from facilities such as playing fields, a bar/ restaurant and access to the Formartine and Buchan Way. Pedestrians and others must currently cross the A947 to access these facilities, which has an AADT of 9,716 vehicles. The A947 also creates severance of Dyce Academy, Dyce Primary and Stoneywood Primary School catchment areas by crossing through them in a north-south direction.
- 16.3.30 The A90 (Figure 16.2d) currently creates severance of Bridge of Don Academy and Scotstown Primary School catchment areas by crossing through them in a north-south direction. The A90 currently carries traffic volumes of 19,957 AADT.

#### **16.4 Potential Impacts**

- 16.4.1 As discussed previously, the impacts of the proposed scheme on pedestrians and others journeys have been assessed with respect to journey length and time, amenity value and community severance.
- 16.4.2 The information collected through surveys indicated that the routes likely to be affected are used predominantly for travelling to and from business and home. It is therefore anticipated that changes to journey time for these users may be more important than issues such as amenity value. However, paths located in and around Brimmond Hill, Standing Stones Wood, Bogenjoss, Kirkhill Forest and the Formartine and Buchan Way are popular recreational routes, whereby journey time is considered to be less important, and impact on amenity value more important to users.
- 16.4.3 The road model assessed in this chapter incorporates design elements which would mitigate potential impacts on pedestrians and others, such as the provision of footpaths alongside the overbridges necessary to enable side roads to pass over the mainline sections of the proposed scheme. The potential impacts described in this section are based on the finalised road model and therefore take these measures into account. However, any specific mitigation required for pedestrians and others including path diversions, farm accommodation bridges, equestrian parapets, and NMU bridges is not included in the Potential Impacts assessment, but is described further in Section 16.5 (Mitigation) and taken into account in the Residual Impacts (Section 16.6).
- 16.4.4 Fourteen potential Conflict Points (i.e. locations at which the proposed scheme would cross existing routes used by pedestrians and others), as shown on Figures 16.1a-g.

##### **Journey Lengths (Distance and Time)**

- 16.4.5 The survey information assisted in identifying existing routes used and subsequent journey times and lengths. Where path usage was low and sufficient journey parameters were not obtained (directions/ user groups), potential routes were identified along existing paths. This was carried out in order to calculate the change in journey length and time, as advised in DMRB.

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- 16.4.6 For a number of Conflict Points (generally the minor roads), the proposed scheme design maintains access along the route with the provision of an overbridge/underbridge and/or a diversion. Where access has been maintained by the scheme design, the impact on journey length has been assessed using the criteria in Table 16.1. Conflict Points to which this applies are listed below:
- C13: Path from North Kingswells to Hillhead of Derbeth;
  - C17: Walton Road;
  - C25: Laingseat Road; and
  - C26: Blackdog Community Woodland.
- 16.4.7 For all other Conflict Points, the proposed scheme design, without mitigation, would close 10 of the 13 routes identified, creating a Severe significance impact.
- 16.4.8 As a result of the bus stop relocations on the A96 and A90, as described below, there may be an increase in journey lengths. It should be noted this is dependant on the direction the pedestrians are coming from to access the bus stops. On this basis, some relocations may result in a positive impact.
- currently there are two bus stops on the westbound carriageway of the A96 at Craibstone. A new bus stop will be created between the two existing stops approximately 200m west of the stop at junction with Dyce drive and approximately 400m east of bus stop 39. This is assessed as being of Slight and Moderate impact significance respectively on pedestrians; and
  - bus stops on both sides of the A90, at Blackdog, would be relocated approximately 550m to the north. This is assessed as being of Major impact significance to pedestrians and others journey lengths.

#### Local Vehicular Traffic

- 16.4.9 Although most minor roads would be retained, three routes are to be closed and stopped up as a result of the Northern Leg. The significance of these closures has been assessed using the criteria in Table 16.1 as follows:
- Chapel of Stoneywood – Fairley Road (C89C) (see Figures 16.b and c): Vehicles are diverted over the AWPR Northern Leg via the Ashtown overbridge. The resultant diversion is expected to have a Slight adverse impact on vehicular users;
  - Chapel of Stoneywood, Newton – Kirkhill Road (U53C) (see Figure 16.1b): Vehicles will need to divert south via Dyce Drive to the A96. The resultant diversion is expected to have a Slight adverse impact on vehicular users; and
  - Newmachar Church Road (C25C) (see Figure 16.1e): Vehicles will be able to cross the AWPR Northern Leg via the B977 overbridge (east). The resultant diversion is expected to have a Slight adverse impact on vehicular users.
- 16.4.10 Local traffic movements would also be affected by changes in traffic volumes on the existing road network resulting from the proposed scheme. The proposed scheme is predicted to result in decreased traffic flows on the A90 and A96 and increased traffic flows on A947, on the basis of comparison with predicted AADT without the proposed scheme for the year of opening. See Chapter 5 for further information on traffic data.

#### Amenity Value

- 16.4.11 As discussed in Section 16.2, for the purposes of assessment it has been assumed that where pedestrians and others would experience a reduction in traffic or road-related noise, vehicular emissions or visual impact, there would be a perceived improvement in amenity value. Conversely, an increase in any such traffic or road-related impacts has been assumed to constitute a reduction

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in amenity value and deterioration in relative pleasantness of journeys. Details of safety provisions are provided in Section 16.5.

- 16.4.12 Construction of the proposed scheme is anticipated to result in some reductions in traffic within Aberdeen city centre. Consequently, some journeys made by pedestrians and others which occur within the wider Aberdeen area, as defined by the cumulative noise assessment (refer to Chapter 54), may be beneficially affected by a reduction in traffic noise and an improvement in amenity. Detailed consideration of amenity impacts over this wider area is beyond the scope of this assessment.
- 16.4.13 Construction of the proposed scheme is also anticipated to result in negative impacts in terms of traffic noise and air quality affecting journeys in the vicinity of the proposed scheme, and routes may also experience adverse visual impacts, affecting amenity value. Traffic flows provided in Table 16.9 represent traffic along a particular section (i.e. between two junctions) and not the full length of the road.
- 16.4.14 Impact on amenity value is assessed at the points where pedestrians and others would have to cross the Northern Leg, either by an overbridge or underpass. The traffic data provided in Table 16.9 are projected flows for the overbridges and underpasses as there are no pedestrian at-grade crossings along the proposed scheme. In addition to the traffic travelling over/ under the AWPR, pedestrians may experience some additional noise from traffic travelling along the AWPR. The potential impact is assessed taking into account visual, noise and air quality impacts.
- 16.4.15 It is assumed that users would experience adverse impacts for a short period of time due to the transient nature of their journeys across the proposed scheme. Based on this assumption, all air quality and noise impacts at the crossing points are anticipated to be Slight for the purposes of assessing impacts on pedestrians and others, despite potentially high traffic flows on the Northern Leg and specific impacts on individual receptors (e.g. residential properties) as described in Chapter 14 (Air Quality) and Chapter 15 (Traffic Noise and Vibration).
- 16.4.16 The visual impacts listed in Table 16.9 have been assessed based on year of scheme opening when mitigation is in place but would not be fully effective (i.e. before new planting has become established). These potential impacts therefore represent the worst-case scenario. Visual impacts are not available for all locations as only selected paths were used in the assessment reported in Chapter 12 (Visual).
- 16.4.17 The significance of potential impact on amenity value taking into account visual, noise, traffic and air quality is summarised in Table 16.9.

**Table 16.9 – Potential Amenity Value Impacts**

Conflict Point	Visual Impacts	Noise Impacts	Air Quality Impacts	Traffic Flows on overbridges/ underpasses (AADT)	Significance of impact on Amenity
C 13 Path from north Kingswells to Hillhead of Derbeth	Moderate/ Substantial	Slight	Slight	6,870	Moderate
C17 Walton Road	Moderate/ Substantial	Slight	Slight	21,804 (A96)	Moderate/ Severe
C25 Laingseat Road	Not selected for visual impact assessment	Slight	Slight	8,124	Slight
C26 Blackdog Community Woodland	Slight	Slight	Slight	No data – low traffic flows anticipated	Negligible/Slight
<b>Safety:</b> All overbridges/ underpass will meet safety standards as required by DMRB (Refer to paragraph 16.5.11)					

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#### Community Severance

##### Relief from Existing Severance

- 16.4.18 According to the DMRB criteria explained in Section 16.2, pedestrians and others would not experience any relief from severance, although the Blackdog Overbridge would provide severance relief for those crossing the A90 at this point. Despite the lack of severance relief on the key vehicular routes, pedestrians and others would experience reductions in traffic along the A96 and A90 as a result of the proposed scheme.
- 16.4.19 To the west of the Northern Leg on the A96, traffic volume is predicted to decrease from 23,887 AADT (without proposed scheme) to 21,804 AADT (with proposed scheme) providing some relief from existing severance. However traffic volumes on the A96 to the east of the AWPR are predicted to increase from 23,069 AADT (without proposed scheme) to 23,594 AADT (with proposed scheme) which doesn't relieve any existing severance within the local community.
- 16.4.20 Traffic volume on the A90 is predicted to decrease from 22,764 AADT (without proposed scheme) to 18,685 AADT (with proposed scheme). This would have a positive impact on pedestrians and others accessing the bus stops and Blackdog Industrial Estate. Additionally, traffic levels on the Blackdog Overbridge would be carrying less traffic (total 16,346 AADT including slip roads potentially crossed by NMUs), providing pedestrians and others with a safer crossing point than existing conditions.

##### New Severance

- 16.4.21 Although not directly severing any communities, the proposed scheme would affect the local paths, tracks and roads used by scattered settlements to access shared community, or area, facilities. Access to the key community facilities (shown in Figures 16.2a-d) is gained via the key routes in 16.4.5. Impact prediction on the journey lengths along those key routes is provided in Table 16.10.
- 16.4.22 Without mitigation, the following paths would be severed causing a Severe impact for pedestrians and others in terms of severance from community facilities: C14 (path from Newton to Brimmond Hill), C15 (Path from Craibstone SAC to Parkhead/ Golf Centre, C16 (Path from Craibstone to Chapel Croft), C18 (Path from Howemoss to Standing Stones Wood), C19 (Path at Bogenjoss/ Kirkhill Forest), C20 (Path at Kirkhill Forest) and C21 (Path at North Kirkhill Forest).
- 16.4.23 Severance from facilities along paths at conflict points C13 (Path from North Kingswells to Hillhead of Derbeth), C17 (Walton Road), C25 (Laingseat Road) and C26 (Blackdog Community Woodland) would be maintained via the scheme design, with impact significance ranging from Slight to Moderate as detailed in Table 16.12 of Section 16.6 (Residual Impacts).
- 16.4.24 A number of bus stop relocations would be required, impacting positively and negatively on severance for pedestrians and others as a result of changes in journey length and traffic volume. However, it should be noted that the change in journey length is dependant on the direction the users are coming from.

#### Countryside Access

- 16.4.25 Access to the outdoor facilities listed under paragraph 16.3.9 is gained via the key routes in Table 16.13 of Section 16.6 (Residual Impacts).
- 16.4.26 Without mitigation, the following paths (identified using their respective Conflict Point numbers) would be severed causing a Severe impact for pedestrians and others in terms of accessing outdoor facilities: C14 (path from Newton to Brimmond Hill), C15 (Path from Craibstone SAC to Parkhead/ Golf Centre, C16 (Path from Craibstone to Chapel Croft), C18 (Path from Howemoss to Standing Stones Wood), C19 (Path at Bogenjoss/ Kirkhill Forest), C20 (Path at Kirkhill Forest) and

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C21 (Path at North Kirkhill Forest). The remaining key routes used to access the outdoor facilities are maintained as part of the scheme design.

#### **16.5 Mitigation**

- 16.5.1 Potential negative impacts have been minimised through the scheme design and mitigation, which has been developed through extensive consultation with organisations such as Aberdeen Cycle Forum, Aberdeen Countryside Project, British Horse Society, Scotways and Aberdeen City and Aberdeenshire Councils. The Local Outdoor Access Forums were not established at the time of consultation. Mitigation has also been developed so as not to hinder the development of future core path networks by both Aberdeen City and Aberdeenshire Councils, and acknowledges the need to provide for all forms of recreational access.
- 16.5.2 As a result of the AWPR Special Road status, NMU provision cannot be provided adjoining the carriageway or at the River Don crossing.
- 16.5.3 Mitigation of impacts from traffic noise and vibration applicable to pathways is proposed in the form of low-noise road surfacing and earthworks. Further details are provided in Chapter 15 (Traffic Noise and Vibration). No mitigation measures are applicable to air quality impacts, as explained in Chapter 14 (Air Quality).
- 16.5.4 No mitigation measures are applicable to the relocation of the bus stops on the A96 and A90 as these are part of the scheme design.
- 16.5.5 As explained in Section 16.4, incorporated road design elements such as road overpasses with pedestrian footway have been assessed as part of the Potential Impacts. Mitigation specifically designed for pedestrians and others as described below and taken into account in the Residual Impacts (Section 16.6).

#### **New Access Provision**

- 16.5.6 Mitigation measures include new access provision in the form of pedestrian overbridges, underpasses and farm accommodation works, in addition to those provided as part of the scheme design.
- 16.5.7 The access provisions at each conflict point are shown in Figures 16.1a-g and described in Residual Impacts. These have been developed to minimise the need for permanent route diversions, or to ensure that such diversions are beneficial to pedestrians and others in terms of factors such as amenity value and safety.
- 16.5.8 One of the principle aims of the mitigation is to link routes into a larger strategic network, and this will require the provision of additional paths to those already available. Where permanent route diversions have been deemed necessary, the shortest route has been proposed so as to minimise impacts on journey time and length. These routes have been labelled as 'proposed alternative routes' on Figures 16.1a-g. However, users may wish to use longer more scenic routes where paths are being used for recreation. These routes have been labelled as 'possible alternative routes'.
- 16.5.9 In summary, of the 14 locations where severance of existing paths may occur, two of these routes (C22, C23 Formartine and Buchan Way) would be maintained along their existing alignment, using an underpass, one would be maintained at grade crossing (C26, Blackdog Community Woodland), whilst 11 would be diverted to cross the Northern Leg of the proposed scheme using an overbridge/underpass.

#### **Safety**

- 16.5.10 The Disability Discrimination Act (1995), as explained in Section 16.2, requires that all paths and access structures should be free from barriers. The Countryside Commission (1994) recommend

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that the maximum gradient for ambulant disabled and wheelchair users is 1:20, although steeper gradients of up to 1:10 may be acceptable over short distances. The BT Community Partnership and Fieldfare Trust (undated) recommend that the minimum width to accommodate all types and abilities of user is 1200mm (1.2m); if heavy use by wheelchairs is envisaged, passing places should be constructed or the ramp width increased to 1700mm (1.7m). Gradient levels of underpasses and overbridges vary between 1:200 (0.5%) and 1:14 (7.2%), providing suitable access for vulnerable users. Should gradients exceed 1:200, handrails will be provided in accordance with British Standard BS8300.

- 16.5.11 All bridges where diversions are proposed have a minimum verge width of 2.5m. There are some exceptions to this such as Kirkhill Overbridge which has been reduced to 0.6m wide on one side only. However, this bridge is an accommodation bridge providing local access to Kirkhill Forest with low vehicle usage. Provision of a verge as part of the diversion along the B977, will exist within the existing verge due to landtake constraints. As a result, there may be areas where the verge is less than 2.5 m. Underpasses will be lit in accordance with the requirements of DMRB Volume 6 Highway Features (TD36/93) 'Subways for Pedestrians and Pedal Cyclists. Layout and Dimensions'.
- 16.5.12 Where equestrian access across the route is provided, safety measures such as parapets, slip resistant surfacing and solid infill panels, are provided in line with standards identified in DMRB Volume 2 Special Structures (BD29/04). Equestrian access via underbridges such as the Formartine and Buchan Way, will have such sufficient clearance to allow riders to remain mounted as clearance is in excess of the minimum requirement of 3.7m for ridden horses.
- 16.5.13 Widened verges to accommodate cyclists and equestrians and safety measures such as equestrian parapets and lighting have been provided where required.

#### **Landscaping**

- 16.5.14 Mitigation in the form of landscape planting is proposed along the length of the scheme to reduce potential visual amenity impacts on residential properties, paths and open space. The proposed landscaping mitigation that will affect the amenity value of routes is discussed in Chapter 11 (Landscape) and shown on Figures 11.5a-p.

#### **Community Severance**

- 16.5.15 Community severance is mitigated by the measures taken for Journey Lengths and Amenity Value.

#### **Countryside Access**

- 16.5.16 Countryside access impacts are mitigated by the measures taken for Journey Lengths and Amenity Value.

## **16.6 Residual Impacts**

- 16.6.1 Residual impacts are addressed in terms of changes to journey lengths, amenity value, community severance and countryside access.
- 16.6.2 The magnitude of residual impacts on pedestrians and others journeys, incorporating the scheme design and proposed mitigation, has been assessed for each of the Conflict Points as shown in Table 16.10. As described in Section 16.5, mitigation includes pedestrian overbridges and underpasses, and accommodation bridges not intended for local vehicular traffic other than local farm access.
- 16.6.3 In the context of Amenity Value, Potential Impacts took into account mitigation planting in the Year of Opening, when trees and scrub in particular would not be mature. The residual impacts in this section consider the landscape planting in the Design Year (15 years after opening), when the landscape planting mitigation would be fully established.

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#### Journey Length and Amenity Value Residual Impacts

- 16.6.4 Residual impacts on journey length and amenity value are shown in Table 16.10 and 16.11 respectively.
- 16.6.5 Where routes have been identified as being predominantly for recreational use, assessment of residual impact significance considers that an increase in journey length may be regarded as beneficial by users in some cases. The routes to which this concept applies are identified as part of the assessment below at each conflict point.

#### Conflict Points

- 16.6.6 C13 (Path from north Kingswells to Hillhead of Derbeth): Pedestrians and others would experience a Moderate adverse impact on amenity value. There would be an increase of 200m in journey length and a subsequent increase in journey time. Taking into account the recreational nature of this route, the residual impact significance of journey length impacts for non vulnerable pedestrians is considered Slight, and for vulnerable pedestrians, Moderate.
- 16.6.7 C14 (Path from Newton to Brimmond Hill): Pedestrians and others would experience a Moderate adverse impact on amenity value. There would be an increase of 330m in journey length and a subsequent increase in journey time for this recreational route. For vulnerable pedestrians the residual impact significance is considered to be Major. For some non-vulnerable pedestrians the increased journey length could be considered to be of benefit to the recreational value of the route and therefore the significance is reduced from Moderate to Slight. The possible alternative routes, as shown on Figure 16.2a, would extend the journey time, but would offer a more pleasant journey in terms of amenity value.
- 16.6.8 C15 (Path from Craibstone to Parkhead): A detailed assessment on amenity value could not be undertaken due to the lack of visual assessment information for this path. However, it is anticipated that pedestrians and others would experience a Slight adverse impact on amenity value, based on potential traffic, noise and air quality impacts. There would be an increase of 450m in journey length, but it should be noted that this route is predominantly used for recreation, and access to the Golf Centre is likely to be made by car in many cases. An increase in journey length could therefore be considered by some users to be beneficial reducing the residual impact significance from Moderate to Slight for non-vulnerable pedestrians and from Major to Moderate for vulnerable pedestrians. Figure 16.1b also indicates a proposed diversion south via Ashtown Overbridge. This is a longer diversion, however, this route provides access for equestrian users.
- 16.6.9 C16 (Path from Craibstone to Chapel Croft): A detailed assessment on amenity value could not be undertaken due to the lack of visual assessment information for this path. However, it is anticipated that pedestrians and others would experience a Slight adverse impact on amenity value, based on potential traffic, noise and air quality impacts. There would be an increase in journey length by 50m to this recreational route. Journey length impacts are considered to be of Slight residual significance for non vulnerable and vulnerable pedestrians.
- 16.6.10 C17 (Walton Road): Pedestrians and others would experience a Moderate adverse impact on amenity value. The increase in journey length of 250m could be considered by some users to be of benefit as this route is predominantly used for recreation. The residual impact significance could be assessed as Moderate for non-vulnerable pedestrians, and Major for vulnerable pedestrians, though taking its recreational value into account, impact significance is reduced to Slight for non-vulnerable pedestrians and Moderate for vulnerable pedestrians.
- 16.6.11 C18 (Path from Howemoss to Standing Stones Wood): A detailed assessment on amenity value could not be undertaken due to the lack of visual assessment information for this path. However, it is anticipated pedestrians and others would experience a Slight impact on amenity value, based on potential traffic, noise and air quality impacts. This recreational route links woodland areas used predominantly for recreation. The predicted increase of 700m, using the alternative route via the Shell pipeline structure, extends the path network in the area, which could be beneficial to some

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users. The residual impact significance is thus reduced from Major to Moderate for non vulnerable pedestrians and from Severe to Major for vulnerable pedestrians.

- 16.6.12 C19 (Bogenjoss): Pedestrians and others would experience a Slight/Moderate adverse impact on amenity value. There would be an increase in journey length of 70m considered to be of Slight significance for pedestrians and Negligible significance for equestrian use.
- 16.6.13 C20 (Kirkhill Forest – Lower Overton): Pedestrians and others would experience a Slight/Moderate adverse impact on amenity value. The increase of 200m in journey length is considered to range from Negligible to Moderate residual significance for users of this recreational route.
- 16.6.14 C21 (North Kirkhill Forest): Pedestrians and others would experience a Slight/Moderate adverse impact on amenity value. This route is predominantly of recreational value forming part of the path network which links up areas of woodland at Kirkhill. The potential increases in journey length of 400m could be considered by some users to be beneficial. Therefore the residual impact significance is reduced from Moderate to Slight for non-vulnerable pedestrians, and from Major to Moderate for vulnerable pedestrians.
- 16.6.15 C22 (Formartine and Buchan Way, where it crosses the A947): This is a recreational route where pedestrians and others would experience a Slight/Moderate adverse residual impact on amenity value. There is no change to journey length and time.
- 16.6.16 C23 (Formartine and Buchan Way, where it crosses the proposed scheme): This is a recreational route where pedestrians and others would experience a Moderate adverse residual impact on amenity value. There would be no change to journey length and time.
- 16.6.17 C24 (Meadowhead): Pedestrians and others would experience a Moderate adverse impact on amenity value of this largely recreational route. Two alternative routes are proposed which extend the recreational path network in the Meadowhead area, which could provide benefit to some users of the route. While the B977 Overbridge (East) would provide access for vehicles to Parkhill Stables and Cattery, NMU use of the route will be predominantly recreational. The residual impact significance is therefore reduced from Major to Moderate for non-vulnerable pedestrians and from Severe to Major for vulnerable pedestrians. Possible Route B(W) crosses the Northern Leg through Little Goval junction. This route is also identified as predominantly of recreational value and therefore the increased journey length of 570m could be viewed by some users as a benefit. Taking this benefit into account the residual impact significance is reduced from Major to Moderate for non vulnerable pedestrians and from Severe to Major for vulnerable pedestrians.
- 16.6.18 C25 (Laingseat Road): Pedestrians and others would experience a Negligible/Slight impact on amenity value. This route is potentially a functional route for the Potterton community accessing bus stops on A90 or Blackdog Industrial Estate. The increase in journey length of 600m is considered to be of Major residual impact significance for non vulnerable pedestrians and Severe residual impact significance for vulnerable pedestrians.
- 16.6.19 C26 (Blackdog Community Woodland): Pedestrians and others would experience a Negligible/Slight impact on amenity value where the minor road crosses the route. The road is anticipated to have very low traffic flows, so crossing it at grade is not anticipated to be a problem for NMUs, with no increase in journey length.

#### Summary

- 16.6.20 As a result of the Northern Leg and pathway diversions, pedestrians and others would experience a Moderate impact on amenity value at four conflict points, and a Major adverse impact on journey lengths and times for non-vulnerable groups at one of the conflict points identified. Impacts experienced at the other conflict points on non-vulnerable users have a less significant impact.
- 16.6.21 It should be noted that the criteria used to assign impact significance are based on journeys being between communities and their facilities, and thus of high importance. Some of the journeys

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assessed are recreational, and impacts may be thus overstated, since an increase in journey length for recreational use may be considered to be of benefit to users in some cases.

- 16.6.22 Key recreational routes include paths accessing Kirkhill Forest (C18, C19, C20) and the Formartine and Buchan Way. The highest level of pedestrian and others activity has been identified along the Formartine and Buchan Way. Access would be maintained across the A947 side road through the provision of a lit underpass, through which equestrians may remain mounted. A lit underbridge suitable for all users is also provided where the Formartine and Buchan Way crosses the Northern Leg. There would therefore be no change to journey length for any user groups. The most significant impact for the Formartine and Buchan Way would be change in amenity value. Pedestrians and others are anticipated to experience a Slight/Moderate adverse impact when using the A947 underpass and a Moderate adverse residual impact when using the Northern Leg underbridge.
- 16.6.23 Noise mitigation such as barriers and bunds have not been included since impacts on pedestrians and others are anticipated to remain Slight at these conflict points. Further details of proposed noise mitigation along other sections of paths are provided in Chapter 15 (Traffic Noise and Vibration).

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**Table 16.10 – Residual Impacts on Journey Lengths**

Conflict Point No	Potential Journey Length Impact – (No Mitigation - Scheme Design only)				Predominant NMU Type	Residual Journey Length Impact – (With Mitigation)				
	Impact Description	Change (m)	Change (mins)	Significance		Mitigation and Residual Impact Description	Change (m)	Change (mins, secs)	Significance	Comment
C13	Access along the path from North Kingswells to Hillhead of Derbeth would be maintained, via North Kingswells underpass, within scheme design.	-	-	see Residual Impacts	Vulnerable pedestrians	-	+200	4 mins	Moderate	Recreational route
				see Residual Impacts	Non-vulnerable pedestrians		+200	2 mins, 24 secs	Slight	
C14	The track would be closed.	-	-	Severe	Vulnerable pedestrians	Proposed diversion for pedestrians south via North Kingswells underpass. (Possible diversions north via Kepplestone Overbridge B(N) or south via North Kingswells underpass A(S))	+330	6 mins, 36 secs	Major	Predominantly recreational route for NMUs
					Non-vulnerable pedestrians		+330	3 mins, 58 secs	Slight	
C15	The track would be closed.	-	-	Severe	Vulnerable pedestrians	Proposed diversion for pedestrians north via Craibstone Junction slip road.	+400	8 mins,	Moderate	Predominantly recreational route for NMUs
					Non-vulnerable pedestrians		+400	4 mins, 48 secs	Slight	
C16	The track would be closed.	-	-	Severe	Vulnerable pedestrians	Proposed diversion for pedestrians via Craibstone Junction slip road.	+50	1 min	Slight	Recreational route
					Non-vulnerable pedestrians		+50	12 secs	Slight	
C17	Access along Walton Road would be maintained, via the A96 , within scheme design	-	-	see Residual Impacts	Vulnerable pedestrians	-	+250	5 mins	Moderate	Recreational route
		-	-	see Residual Impacts	Non-vulnerable pedestrians		+250	3 mins	Slight	
C18	The track would be closed.	-	-	Severe	Vulnerable pedestrians	Proposed diversion for pedestrians south via the Shell pipeline structure.	+700	14 mins	Major	Predominantly recreational route for NMUs
					Non-vulnerable pedestrians		+700	8 mins, 24 secs	Moderate	

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Conflict Point No	Potential Journey Length Impact – (No Mitigation - Scheme Design only)				Predominant NMU Type	Residual Journey Length Impact – (With Mitigation)				
	Impact Description	Change (m)	Change (mins)	Significance		Mitigation and Residual Impact Description	Change (m)	Change (mins, secs)	Significance	Comment
C19	The track would be closed.	-	-	Severe	Vulnerable pedestrians	Proposed diversion for pedestrians, cyclists and equestrians via Kirkhill Overbridge	+70	1 min, 24 secs	Slight	Recreational route
					Non-vulnerable pedestrians		+70	50 secs	Slight	
					Equestrians		+70	25 secs	Negligible	
C20	The track would be closed.	-	-	Severe	Vulnerable pedestrians	Proposed diversion for pedestrians, cyclists and equestrians via Kirkhill Overbridge	+200	4 mins	Moderate	Recreational route
					Non-vulnerable pedestrians		+200	2 mins, 24 secs	Slight	
					Equestrians		+200	1 min, 12 secs	Slight	
					Cyclists		+200	36 secs	Negligible	
C21	The track would be closed.	-	-	Severe	Vulnerable pedestrians	Proposed diversion for pedestrians via Pitmedden Home Farm accommodation bridge.	+400	8 mins	Moderate	Predominantly recreational route for NMUs
					Non-vulnerable pedestrians		+400	4 mins, 48 secs	Slight	
C22	The track would be closed.	-	-	Severe	Vulnerable pedestrians	Formartine and Buchan Way maintained for pedestrians, equestrians and cyclists via underpass.	0	0	Negligible	Recreational route
					Non-vulnerable pedestrians		0	0	Negligible	
					Equestrians		0	0	Negligible	
					Cyclists		0	0	Negligible	
C23	The track would be closed.	-	-	Severe	Vulnerable pedestrians	Formartine and Buchan Way maintained for pedestrians, equestrians and cyclists via underpass.	0	0	Negligible	Recreational route
					Non-vulnerable pedestrians		0	0	Negligible	
					Equestrians		0	0	Negligible	
					Cyclists		0	0	Negligible	

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Conflict Point No	Potential Journey Length Impact – (No Mitigation - Scheme Design only)				Predominant NMU Type	Residual Journey Length Impact – (With Mitigation)				
	Impact Description	Change (m)	Change (mins)	Significance		Mitigation and Residual Impact Description	Change (m)	Change (mins, secs)	Significance	Comment
C24	The track would be closed.	-	-	Severe	Vulnerable pedestrians	Proposed diversion for pedestrians via A(E) B977 Overbridge (possible alternative west via Route B(W) Little Goval Junction).	+700	14 mins	Major	Predominantly recreational route for NMUs
					Non-vulnerable pedestrians		+700	8 mins, 24 secs	Moderate	
C25	Access along Laingseat Road and across the A90 would be maintained via Blackdog Overbridge	-	-	see Residual Impacts	Vulnerable pedestrians	-	+600	12 mins	Severe	Recreational route
					Non-vulnerable pedestrians		+600	7 mins, 12 secs	Major	
C26	Path within Blackdog Community Woodland would be severed.	-	-	see Residual Impacts	Vulnerable pedestrians	-	0	0	Negligible	Recreational route – access is maintained at grade
					Non-vulnerable pedestrians					

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**Table 16.11 – Residual Amenity Value Impacts**

Conflict Point	Visual Impacts (with mitigation)	Noise Impacts	Air Quality Impacts	Traffic Flows on overbridges/ underpasses (AADT)	Significance of impact on Amenity	Comments
C 14 Path from Newton to Brimmond Hill	New path so no visual assessment	Slight	Slight	6,870 (Kingwells underpass)	Moderate	Magnitude of impact does not include visual impact
C15 Path from Craibstone to Parkhead	Not selected for visual impact assessment	Slight	Slight	1,032	Slight	Magnitude of impact does not include visual impact
C16 Path from Craibstone to Chapel Croft	Not selected for visual impact assessment	Slight	Slight	1,032	Slight	Magnitude of impact does not include visual impact
C18 Path from Howemoss to StandingStones Wood	Not selected for visual impact assessment	Slight	Slight	No traffic (Shell pipeline structure)	Slight	Magnitude of impact does not include visual impact. The route currently forms part of a wider path network. Adverse impacts are therefore considered localised in nature as the proposed diversion would only affect a small section of the route
C19 Bogenjoss	Substantial	Slight	Slight	Occasional farm traffic/ local access (Kirkhill overbridge)	Slight/ Moderate	The route currently forms part of a wider path network. Adverse impacts are therefore considered localised in nature as the proposed diversion would only affect a small section of the route
C 20 Kirkhill Forest	Substantial	Slight	Slight	Occasional farm traffic/ local access (Kirkhill overbridge)	Slight/ Moderate	The route currently forms part of a wider path network. Adverse impacts are therefore considered localised in nature as the proposed diversion would only affect a small section of the route
C 21 North Kirkhill Forest	Substantial	Slight	Slight	Occasional farm traffic/ local access	Slight/ Moderate	The route currently forms part of a wider path network. Adverse impacts are therefore considered localised in nature as the proposed diversion would only affect a small section of the route
C 22 Formartine and Buchan Way	Substantial	Slight	Slight	No traffic	Slight/ Moderate	The route currently forms part of a wider path network. Adverse impacts are therefore considered localised in nature as the proposed diversion would only affect a small section of the route
C 23 Formartine and Buchan Way	Substantial	Slight	Slight	No traffic	Moderate	The route currently forms part of a wider path network. Adverse impacts are therefore considered localised in nature as the proposed diversion would only affect a small section of the route
C 24 Meadowhead	Substantial	Slight	Slight	2,326 (B977 east overbridge)	Moderate	N/A
C 26 Blackdog Community Woodland	Slight	Slight	Slight	No data – low traffic flows anticipated	Negligible/ Slight	Localised impacts only.
<b>Safety:</b> All overbridges/ underpass will meet safety standards as required by DMRB (Refer to 16.5.8)						

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#### Community Severance

##### Relief from Existing Severance

- 16.6.24 There are no additional mitigation proposals to provide relief from existing severance, therefore residual impacts are as described in paragraphs 16.4.18 to 16.4.20.

##### New Severance

- 16.6.25 Although not directly severing any communities, the proposed scheme would affect the local paths, tracks and roads used by scattered settlements to access shared community facilities, including schools and recreational woodland areas. Severance impacts on conflict points are tabulated in Table 16.12 and discussed in the following text.
- 16.6.26 The proposed scheme would result in the creation of new severance of pedestrians and others from community facilities and recreational areas in the following areas (see Section 16.3, Table 16.6 for estimated numbers of users and Figures 16.1a-g for survey site locations):
- the path from North Kingswells and Newhills to access Brimmond and Elrick Hills (C13, C14);
  - the path network linking the SAC Craibstone campus to the network of paths to the west and Craibstone Golf Centre (C15, C16);
  - access along Walton Road to South Kirkhill Forest (C17);
  - the paths between Kirkhill Industrial Estate and Kirkhill Forest (C18, C19, C20);
  - the path between Lower Overton and East Woodlands (C21) and Laingseat Road (C25); and
  - the path network within Blackdog Community Woodland (C26).
- 16.6.27 Motorised user access to the SAC Craibstone campus would be maintained via the Chapel of Stoneywood Fairley Road. Motorised users would access Craibstone Golf Centre via Ashtown Overbridge.
- 16.6.28 The potential impact on access for pedestrians and others to Parkhill Stables and Cattery is discussed in Chapter 7 (Land Use). For the purposes of the assessment on severance it is assumed that this business would remain at its existing location. Motorised users would access the business via the B977 Overbridge (East) which is expected to experience an AADT of 2,326 vehicles. Access to Parkhill Nursery would also be maintained via the B977 Overbridge (East). Although no existing pathways provide access to these businesses, pedestrians would be able to utilise the overbridge, reducing the impact on severance.
- 16.6.29 The relocation of the bus stops on the A96 may provide a benefit to users in terms of severance due to the predicted decrease in traffic, however, the potential increase in journey length to the bus stops may have negative impacts on some users. The relocation of the bus stops on the A90 may have a negative impact on pedestrians due to the increase in journey length for those working at the Industrial Estate. However, the provision of a safer crossing via the A90 Blackdog Overbridge, which would carry fewer vehicles than the A90 currently does and benefit pedestrians and others accessing the bus stops and Blackdog Industrial Estate.
- 16.6.30 Although there are no schools within the study area, there are schools located outside of the study area whose catchments would be crossed by the proposed scheme. Residual severance impacts relating to access to the schools are assessed to be of Negligible significance or less, as listed below:
- Newhills Primary: the proposed scheme would sever the middle of its catchment area. Due to the rural nature and size of the catchment area, it is expected that most children would be driven to school. Chapel of Stoneywood Fairley Road would be closed. Using the criteria from Table 16.1, motorised users would experience a Negligible residual impact as a result of this diversion.

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- Stoneywood Primary: the proposed scheme would follow the boundary of its catchment area, therefore no residual impact is anticipated.
  - Dyce Primary: the proposed scheme would sever the middle of its catchment area. Due to the rural nature and size of the catchment area, it is expected that most children would be driven to school. Newmachar Church Road would be stopped up and diverted across the B977 Overbridge (east). Using the criteria from Table 16.1, motorised users would experience a Negligible residual impact as a result of this diversion.
  - Scotstown Primary: the proposed scheme would cross the northern edge of the catchment boundary. All the minor roads are to be maintained, therefore no residual impact is anticipated.
  - Bankhead Academy: the proposed scheme would sever the middle of its catchment area. The impact is the same as for Newhills Primary provided above.
  - Dyce Academy: the proposed scheme would sever the middle of its catchment area. The impact is the same as for Dyce Primary provided above.
  - Bridge of Don Academy: the proposed scheme would cross the northern edge of the catchment boundary. The impact is the same as for Scotstown Primary provided above.
- 16.6.31 There would be no at-grade crossings along the proposed scheme due to the high levels of fast moving traffic. Traffic levels provided relate to vehicles travelling across or under the proposed scheme using the appropriate overbridge or underpass. The residual impacts on pedestrians and others in terms of severance from facilities are shown in Table 16.12.
- 16.6.32 Where more than one diversion has been proposed, the most direct route has been chosen for the purposes of assessing new severance. Traffic data were not available for all overbridges/underpasses, for example footbridges and farm accommodation bridges where there would be no or few vehicles.
- 16.6.33 As a result of predicted traffic and diversions associated with the Northern Leg of the proposed scheme, pedestrians and others would experience residual severance impacts at the conflict points as shown in Table 16.12 below.

**Table 16.12 – Residual Impacts for New Severance**

Conflict Point	Overbridge/ underpass AADT	Journey change length (m)	New overbridge/ underpass	Residual Impact Significance	Comments
C13 Path from north Kingswells to Hillhead of Derbeth	6,870	<250	North Kingswells underpass	Slight	n/a
C14 Path from Newton to Brimmond Hill	6,870	250-500	North Kingswells underpass	Slight/ Moderate	n/a
C15 Path from Craibstone to Parkhead	1,032	>500	Ashtown Overbridge	Moderate	n/a
C16 Path from Craibstone to Chapel Croft	1,032	>500	Ashtown Overbridge	Moderate	n/a
C17 Walton Road	21,804	250-500	A96 Junction underpass	Moderate/Severe	Predominantly recreational route
C18 Path from Howemoss to StandingStones Wood	No traffic	>500	Shell pipeline structure	Slight/ Moderate	Predominantly recreational route
C19 Bogenjoss	No traffic	<250	Kirkhill Overbridge	Negligible/ Slight	n/a
C 20 Kirkhill Forest	No traffic	<250	Kirkhill Overbridge	Negligible/ Slight	n/a
C 21 North Kirkhill Forest	Farm vehicles only	250-500	Kirkhill Overbridge	Slight/ Moderate	n/a
C22, C23 and C24 not assessed for new severance as the Formartine and Buchan Way and the path at Meadowhead do not link communities to facilities.					
C25 Laingseat Road	8,124	>500	A90 Blackdog Overbridge	Slight/Moderate	Improved safety provision.

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#### Countryside Access

- 16.6.34 The assessment took into account the differing issues and objectives for outdoor access facilities. Except for Craibstone (private and commercial plantation), Little John's Wood (commercial plantation) and Blackdog Community Woodland (plantation), all major forest areas are owned and managed by the Forestry Commission. Therefore, access and enjoyment at Kirkhill Forest/ StandingStones Wood and East Woodlands (partly) are potentially already subject to the regular application of restrictions during clearing operations. Brimmond Hill/ Elrick Hill, Tyrebagger Hill Recumbent Stone Circle, Craibstone, East Woodlands, River Don, the Formartine and Buchan Way, Little John's Wood and Red Moss are popular local and tourist attractions for ramblers and hill climbers. The provision of access along the River Don varies and is considered in The Finalised Aberdeen Local Plan as poor in this area. Nevertheless, it has the potential to provide an attractive setting for informal outdoor pursuits and a continuation of the urban path network. Lily Loch, Corby Loch and Bishops Loch are used for recreational pursuits including fishing. The Community Woodland at Blackdog is of recreational value and promotes social inclusion in the urban community.
- 16.6.35 Pedestrians and others would be expected to experience a degree of loss in amenity value at areas including Brimmond Hill and Kirkhill Forest where they are close to the Northern Leg of the proposed scheme. However, mitigation in the form of landscape and ecological planting would reduce the impact, resulting in a Slight residual impact on pedestrians and others utilising the recreational areas as listed above.
- 16.6.36 Of the paths identified in Section 16.4 as potentially being severed, all would remain open with the incorporation of appropriate mitigation, but most would result in a diversion. Residual Countryside Access Impacts are shown below in Table 16.13.

**Table 16.13 – Residual Countryside Access Impact Assessment**

Outdoor Access Facility	Mitigation (refer to Section 16.5)	Residual Impacts
Brimmond Hill/ Elrick Hill	Landscaping/planting	Reduction in amenity Access maintained via North Kingswells Junction as part of scheme design
Craibstone	Landscaping/planting	Reduction in amenity Access maintained via Ashtown Overbridge as part of scheme design
Tyrebagger Hill Recumbent Stone Circle	Landscaping/planting	Reduction in amenity No impact on access
Kirkhill Forest/ StandingStones Wood	Diversion via Kirkhill Overbridge Landscaping/planting	Severance of access path (C18, 19 and 20) Reduction in amenity
East Woodlands	Landscaping/planting	Reduction in amenity Access maintained via accommodation bridge as part of scheme design
River Don	Landscaping/planting	Reduction in amenity No impact on access
Formartine and Buchan Way	Lighting through underpasses	Reduction in amenity No impact on access
Little John's Wood	Landscaping/planting	Reduction in amenity Access maintained via B977 Overbridge (east) as part of scheme design
Red Moss	n/a	No impact on amenity value Access maintained via Lochgreens Overbridge and Newtonhill Overbridge as part of scheme design
Lily Loch/ Corby Loch/ Bishops Loch	n/a	No impact on amenity value Access maintained via Lochgreens Overbridge and Newtonhill

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Outdoor Access Facility	Mitigation (refer to Section 16.5)	Residual Impacts
		Overbridge as part of scheme design
Blackdog Community Woodland	Landscaping/ planting	Reduction in amenity Access is maintained at grade across the minor road.

## 16.7 References

Aberdeen City Council (1991). Adopted Local Plan.

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