18 Vehicle Travellers

This chapter assesses the impact on vehicle travellers in terms of views from the road and driver stress. The expected views for travellers are described for both the online and offline sections of the proposed scheme and compared with views gained from the existing A90, M9 and M9 Spur where the proposed scheme would be constructed online.

North of the Firth of Forth, views for vehicle travellers would remain similar to those from the existing A90, with steep rock cuttings, which would channel views towards the approach to the Main Crossing. Views for travellers on the Main Crossing would also be similar to those from the Forth Road Bridge, with scenic, panoramic views across the Firth of Forth. However, the existing suburban views from the existing A90 to the south of the Forth Road Bridge would be replaced by a range of more open, attractive views from the southern route, across rolling farmland and into the designed wooded landscape of Dundas. Overall, the proposed scheme would improve views for drivers and provide a stimulating and scenic journey.

Driver stress is caused by frustration, fear of a potential accident and uncertainty of the route which is being followed. Current levels of driver stress for the existing A90/M90 road corridor during peak hours are generally Low to Moderate. Over time, a forecast increase in traffic levels on the road network and the consequent reduction in speeds are likely to result in generally higher levels of driver stress during peak hours. Driver stress over the majority of the network in the vicinity of the proposed scheme would either remain the same or increase in the Do-Something scenario (i.e. with the proposed scheme in place) compared to the Do-Minimum (i.e. without the proposed scheme), with overall High driver stress predicted for vehicle travellers to the north of the proposed Queensferry Junction and generally Moderate driver stress to the south.

18.1 Introduction

18.1.1 This chapter presents the assessment of potential impacts on vehicle travellers in terms of views from the road and driver stress for the proposed scheme.

View from the Road

18.1.2 View from the road is defined as the extent to which vehicle travellers are exposed to different types of scenery through which the proposed scheme passes. The existence of a new road might enable more people to view the landscape than previously. In areas of high quality scenic landscape, the road may allow travellers to appreciate the area and their location in relation to distinctive landscape features by allowing appropriate views. Views from a new road or section of a road may potentially help to alleviate driver stress, although views are not considered in driver stress assessment. Conversely, where views from a road are restricted by the new construction, this may contribute to driver boredom.

Driver Stress

18.1.3 Driver stress is defined, for the purposes of assessment, as the mental and physiological effects experienced by a driver using a road network. Factors influencing the level of driver stress include the road layout and geometry, surface riding characteristics, junction frequency and the speed and flow per lane. In general, drivers will choose the route that they believe to give the shortest reliable journey time, taking account of expected variability and coping with associated stress.

18.1.4 The three main components of driver stress are frustration, fear of a potential accident and uncertainty of the route which is being followed. These components are discussed below:

- Frustration: caused by a driver being unable to drive at a speed at which they wish, in relation to the conditions of the road. The level of frustration increases as the travelling speed falls in relation to expectations and may be caused by high flow levels, intersections, road works or difficulties in overtaking slower moving traffic.
- Fear of Potential Accident: the main factors leading to this are the presence of other vehicles, inadequate sight distances and the likelihood of pedestrians stepping on to the road. Other

factors include complex junctions and roundabouts, and poorly maintained road surfaces. Fear is highest when speeds, flows and the proportion of heavy vehicles are all high.

- Route Uncertainty: caused primarily by signage that is inadequate for the individual's purposes. Poor lighting may also cause uncertainty as turnings and junctions may not be seen in advance.

18.2 Approach and Methods

View from the Road

18.2.1 Views from the road have been assessed in accordance with DMRB Volume 11, Section 3, Part 9 Vehicle Travellers (Highways Agency et al., 1993).

18.2.2 The assessment takes into account the types of scenery or landscape character, the extent to which travellers would be able to view the scene, the quality of the landscape and features of particular interest or the prominence of the view, which all contribute to the enjoyment of the journey and can help to prevent boredom.

18.2.3 The extent to which travellers will be able to perceive the landscape through which they are passing will vary with the relative level of the road and its surrounding topography and vegetation. The categories used in the assessment are:

- No view – road in very deep cutting or contained by false cuttings, environmental barriers or adjacent structures;
- Restricted view – road in frequent cuttings and/or with frequent environmental barriers or adjacent structures blocking the view;
- Intermittent view – road generally at grade but with shallow cuttings, environmental barriers or structures at intervals; and
- Open view – road generally at grade or on embankment with views extending over the wider landscape or only restricted by existing landscape features.

Driver Stress

18.2.4 The available research evidence does not permit the use of finely graded assessments of driver stress. Thus, driver stress has been assessed in accordance with DMRB Volume 11, Section 3, Part 9 (Vehicle Travellers) (Highways Agency et al., 1993), using the three point scale:

- High;
- Moderate; and
- Low.

18.2.5 This assessment is based on estimating the average peak hourly flow per lane in 'flow units' and the average journey speed of each section of the road. Flow units are calculated whereby a car or light van is equal to one flow unit and a commercial vehicle is equal to three flow units. Traffic speed is based on average speed of traffic, excluding delays at downstream junctions.

18.2.6 The assessment has been undertaken for the existing traffic conditions on the basis of 2005 traffic flows as explained in Chapter 2 (Need for the Scheme), and for the design year (2032) when the highest traffic flow in the first 15 years after opening is predicted. Tables 18.1 and 18.2 present the guidance provided by DMRB on the appropriate category of stress levels for varying flow, speed and standard of road for motorway and dual carriageway roads respectively. The categories only apply to those sections of road where traffic flows and speeds are known for over 1km of the route.

Table 18.1: Driver Stress Levels on Motorways

Average Peak Hourly Flow per Lane[1] (flow units/hour)	Average Journey speed km/hr		
	Under 75	75-95	Over 95
Under 1200	High[2]	Moderate	Low
1200 – 1600	High	Moderate	Moderate
Over 1600	High	High	High

Table 18.2: Driver Stress Levels on Dual Carriageway Roads

Average Peak Hourly Flow per Lane[1] (flow units/hour)	Average Journey speed km/hr		
	Under 60	60-80	Over 80
Under 1200	High[2]	Moderate	Low
1200 – 1600	High	Moderate	Moderate
Over 1600	High	High	High

[1] A car or light van equals one flow unit. A commercial vehicle over 1.5 tonnes unladen weight or a public service vehicle equals 3 flow units.

[2] 'Moderate' in urban area.

18.2.7 Forecast traffic composition, speeds and flow rates, used as the basis for the numerical assessment of driver stress (and noise and air quality assessments etc) were derived using models supplied by MVA and the David Simmonds Consultancy (TMfS:05A). The TMfS model was calibrated by MVA and David Simmonds Consultancy to observed traffic count data.

18.3 Baseline Conditions

View from the Road

18.3.1 Direct comparison of anticipated views with baseline conditions (i.e. views gained from the existing road network) is only possible where the proposed scheme would be constructed online and where there is therefore existing traffic flow, as follows:

- A90: Admiralty Junction to Ferrytoll Junction; and
- M9: Ross's Plantation to southwest Kirkliston.

18.3.2 However, baseline vehicle traveller views for the entire existing A90 between Admiralty Junction and M9 Junction 1A are described below in paragraphs 18.3.5 to 18.3.18.

18.3.3 Anticipated views for travellers are described for both the online and offline sections of the proposed scheme in Section 18.6 (Residual Impacts).

18.3.4 Further descriptions of the landscape, including the condition and scenic quality, through which the proposed scheme would pass and views in the vicinity of the proposed scheme are provided in Appendix A12.1 (Landscape Character: Sensitivity and Impact Magnitude) and Chapter 13 (Visual) respectively.

Northern Study Area

18.3.5 At Admiralty Junction, the existing M90 is on embankment and overbridges, which enables limited views west to Rosyth and the east to Inverkeithing Industrial Estate. On the southern side of the junction, attractive, short range views of scrub woodland on the rising landform of Fairy Kirk hill are available to the east.

18.3.6 Further south, a deep cutting to the east of Castlandhill contains views to both sides of the road, although the sense of enclosure is softened by the existing scrub vegetation scattered across much of the slopes. Southbound traffic gains views along the carriageway towards the towers of the existing Forth Road Bridge.

18.3.7 South of Dunfermline Wynd overbridge, the depth of the road cutting is reduced and views to the west of the road become more open, although they are limited in range by the rising topography of Castlandhill. To the east of the road, views remain restricted by Muckle Hill, with limited views across an open field to scrub woodland around the adjacent housing. As the existing A90 approaches the existing Ferrytoll diverge slip road, views to the east become contained by steep rock cuttings, although the weathered appearance of the rock face and the scrub vegetation growing along the rock ledges helps to soften the sense of enclosure.

18.3.8 Beside Ferrytoll Park and Ride, open views are available to the east across the car park towards the railway viaduct and existing Ferrytoll roundabout. Views to the west of the road are restricted by the scrub vegetation that covers a rocky knoll situated between the A90 and Castlandhill Road.

18.3.9 Between Ferrytoll Junction and the northern side of Ferry Hills, there are open views to the west across St. Margaret's Marsh towards the Firth of Forth and Rosyth Europarc, although they are partially disrupted in places by existing roadside scrub and woodland. Northbound traffic gains views across Whinny Hill and the Castlandhill Woods to the small settlement on Castlandhill. Views to the east of the road are generally limited by Ferry Hills and further rock cuttings. The sense of enclosure is reduced in places by the natural weathering of the rock faces and the scattered scrub vegetation across the slopes and where the rock face is more distant from the road.

18.3.10 On the final approach to the Forth Road Bridge, views from both northbound and southbound carriageways are contained by deep rock cuttings through Ferry Hills. The appearance of the cutting to the west is softened by scrub vegetation, while the larger rock cutting to the east is softened by weathering but remains bare of vegetation.

Forth Road Bridge

18.3.11 Views from the Forth Road Bridge are partially disrupted by the structural elements of the bridge, resulting in intermittent views. In clear weather, there are views west towards Hopetoun Estate on the southern shore and Rosyth Europarc and Naval Base on the northern shore, with distant views extending inland along the estuary to Grangemouth and Kincardine. Towards the southern end of the Forth Road Bridge, travellers gain open views from both sides of the road across South Queensferry. Views to the east are dominated by the Forth Rail Bridge, beyond which there are limited views over North Queensferry towards Dalgety Bay and the islands in the Firth of Forth. Views directly ahead along the carriageway are limited by the towers and suspension cables of the Forth Road Bridge, with southbound traffic gaining glimpses of South Queensferry and northbound traffic gaining views of Castlandhill and Ferry Hills.

Southern Study Area

18.3.12 South of the Forth Road Bridge, initial views east from the existing A90, for southbound travellers, are obstructed by the FETA building and surrounding vegetation. Views to the west are limited by established vegetation around a housing estate. However, the wide carriageway of the former bridge toll plaza reduces the sense of enclosure and enables views for northbound travellers across the Firth of Forth.

18.3.13 As the road passes beneath the Echline Junction, views to both sides of the road are contained by the embankments of slip roads and the structures of overbridges.

18.3.14 Between the slip roads of Echline Junction and the A8000 overbridge, travellers gain open views to the west across the rolling, open farmland at the northern edge of the Dundas Estate, which extend to the mature woodland around the edge of the estate. To the east of the road, there are open

views across the car parks of Ferry Muir and a development site near the edge of South Queensferry, which are partially screened by the Dakota Hotel.

18.3.15 Between the A8000 overbridge and the merge of the A90 and the M9 Spur at the Echline Junction, there are open views to the south of the road across adjacent fields that are limited by the established woodland field boundaries. There are also intermittent views to the north of the road towards the southern edge of South Queensferry across rolling farmland, which are partially disrupted by blocks of established woodland.

18.3.16 Views south from the M9 to the west of M9 Junction 1A are generally open between Ross's Plantation and the westbound diverge slip road, with the embankments for the existing road enabling open views across the rolling farmland towards Newliston Estate. Views to the north are more enclosed by established roadside woodland.

18.3.17 To the east of M9 Junction 1A there are limited views to the north of the road, which are partially restricted by the embankments of the junction and existing woodland around the junction. Further east on the M9, cuttings and established woodland restrict views to the north and south.

18.3.18 Views from the M9 Spur as it approaches M9 Junction 1A are restricted by the established roadside woodland, with open views becoming available as the road approaches Dundas Estate. For southbound travellers, the positioning of the road on high embankment provides views across Kirkliston and the surrounding farmland.

Driver Stress

18.3.19 Current levels of driver stress for the existing A90/M90 road corridor during peak hours are generally Low or Moderate, but are considered to be High northbound from the forth Road Bridge to Admiralty Junction. Average peak hourly flows and driver stress levels on the existing road network in 2005 are shown in Table 18.3.

Table 18.3: Driver Stress Levels on Existing Road Network in 2005

Link Description	Direction	Road Class	Average Peak Hourly Flow per Lane (Flow Units/Hour)	Average Vehicle Speed (km/h)	Driver Stress
Halbeath – Masterton	northbound	Motorway	1452	99	Moderate
	southbound		1180	100	Low
Masterton – Admiralty	northbound	Motorway	1534	100	Moderate
	southbound		1200	100	Moderate
Admiralty – Ferrytoll	northbound	Dual Carriageway	1732	86	High
	southbound		1265	97	Moderate
Forth Road Bridge	northbound	Dual Carriageway	1743	37	High
	southbound		1343	63	Moderate
Ecline - Scotstoun	northbound	Dual Carriageway	684	79	Moderate
	southbound		544	793	Moderate
M9 Spur	northbound	Motorway	672	101	Low
	southbound		682	101	Low
A90 East of Scotstoun	northbound	Dual Carriageway	672	101	Low
	southbound		817	79	Moderate
M9 J1a - Newbridge	northbound	Motorway	1034	98	Low
	southbound		984	99	Low

18.4 Potential Impacts

View from the Road

18.4.1 Impacts are determined by the extent to which vehicle travellers would be able to perceive the landscape through which they are passing.

18.4.2 Potential impacts upon views from the road arising from the elements of the proposed scheme are identified as follows:

- decreased extent to which vehicle travellers would be able to perceive the landscape because of deep cutting, adjacent structures, false cuttings and environmental barriers; and
- increased extent to which vehicle travellers would be able to perceive the landscape because the road would generally be at grade or elevated on embankment and/or existing woodland or landform is removed.

18.4.3 Views from the proposed scheme in winter year of opening, which take into account mitigation by scheme design and landscape mitigation earthworks, are presented with views from the proposed scheme in summer 15 years after opening, when landscape mitigation planting will be also be effective, in Section 18.6, (Residual Impacts: Tables 18.5, 18.6 and 18.7) and shown on Figures 18.1 and 18.2.

Driver Stress

18.4.4 Driver stress can be seen to increase generally between the present day levels and the Do-Minimum levels forecast for 2032. The sole differences between the present day and 2032 Do-Minimum assessments are the traffic volumes forecast on each section. As the road standard does not change, the increased traffic volumes can, on some sections, exceed the traffic volume thresholds which apply in the present day assessment, and can result in re-classification of the levels of driver stress. Forecast driver stress levels are presented in table 18.4.

18.4.5 Assessed road sections where driver stress is forecast to increase between present levels to the Do-Minimum by 2032, are:

- Halbeath – Masterton (both directions);
- Masterton – Admiralty (southbound);
- Forth Road Bridge (southbound);
- A90 east of Scotstoun (both directions); and
- M9 J1A – Newbridge (both directions).

18.4.6 Potential impacts of the Do-Something scenario (i.e. with the proposed scheme) would be similar to the forecast conditions in the absence of the proposed scheme, due to the forecast increase in traffic and the consequent reduction in speeds. Relative to the Do-Minimum forecast, driver stress will also increase in the following sections:

- Admiralty – Ferrytoll, southbound; and
- M9 spur, southbound.

18.4.7 All other assessed road sections and directions retain the same level of driver stress in the Do-Something as in the Do-Minimum.

Table 18.4: Comparison of Stress Levels, Do-Minimum 2032 and Do-Something 2032

Link Description	Direction	Road Class	Average Peak Hourly Flow per Lane (Flow Units/hr)	Average Vehicle Speed (km/h)	Driver Stress
Do-Minimum 2032					
Halbeath – Masterton	Northbound	Motorway	1905	92	High
	Southbound		1832	94	
Masterton – Admiralty	Northbound	Motorway	1349	90	Moderate
	Southbound		1923	95	High
Admiralty – Ferrytoll	Northbound	Dual Carriageway	2176	37	High
	Southbound		1376	80	Moderate
Forth Road Bridge	Northbound	Dual Carriageway	2387	19	High
	Southbound		2073	26	
Echline – Scotstoun	Northbound	Dual Carriageway	1560	71	Moderate
	Southbound		1222	78	
M9 Spur	Northbound	Motorway	1019	100	Low
	Southbound		949	101	
A90 East of Scotstoun	Northbound	Dual Carriageway	1501	72	Moderate
	Southbound		1089	79	
M9 J1A – Newbridge	Northbound	Motorway	1574	83	Moderate
	Southbound		1510	84	
Do-Something 2032					
Halbeath – Masterton	Northbound	Motorway	2215	86	High
	Southbound		2364	83	
Masterton – Admiralty	Northbound	Motorway	1634	82	High
	Southbound		2403	82	
Admiralty – Ferrytoll	Northbound	Motorway	1798	87	High
	Southbound		1654	90	
Main Crossing	Northbound	Motorway	3142	28	High
	Southbound		2532	70	
Queensferry – Scotstoun	Northbound	Dual Carriageway	1644	90	Moderate
	Southbound		1611	90	
M9 Spur	Northbound	Motorway	1019	100	Low
	Southbound		1474	95	Moderate
A90 East of Scotstoun	Northbound	Dual Carriageway	1454	73	Moderate
	Southbound		951	79	
M9 J1A - Newbridge	Northbound	Motorway	1218	106	Moderate
	Southbound		1331	106	

18.4.8 Many of the links included within this assessment are considerably shorter than the 1km minimum length to which the DMRB driver stress categories apply, but have been included to provide an indication of general driving conditions.

18.4.9 For both Do-Something and Do-Minimum, driver stress to the north of Queensferry/ Echline is assessed as Moderate or High, but generally Moderate to the south.

18.5 Mitigation

View from the Road

18.5.1 Mitigation measures designed to reduce adverse impacts on the view from the road are summarised below. The landscape mitigation proposals have been developed to provide opportunities for a varied sequence of views for travellers, which endorse the local landscape character and promote the approach to the Main Crossing. Further details of the mitigation proposals are provided in Chapter 12 (Landscape).

- high standard of aesthetics for the proposed scheme, particularly the sensitive design of the Main Crossing, to avoid visual confusion and complement views of the Forth Road Bridge and Forth Rail Bridge;
- integration of the alignment and earthworks with the surrounding topography;
- formation of new rock cuttings to achieve a natural appearance;
- provision of false cuttings and noise barriers to screen or restrict views of the road;
- provision of replacement stone walls, hedgerows, hedgerow trees and standard trees to provide screening and reinstate field boundaries; and
- planting mixed or scrub woodland to screen views, integrate and soften the sense of enclosure created by new cuttings and embankments and reflect the character of the existing landscape.

Driver Stress

18.5.2 The proposed scheme will be designed to appropriate roads design standards. Consequently, it may be considered that aspects of the design may contribute to reducing the impact of some of the aspects of driver stress. Improvement features to reduce impacts include:

- improved signage to reduce confusion and uncertainty and improve navigation confidence;
- additional hard shoulders and verges to improve perceived safety;
- improved operational reliability and resilience in respect of maintenance requirements to reduce driver frustration during periods of maintenance; and
- reduction in the frequency and impact of incidents on traffic flow to reduce driver frustration arising from delays due to unplanned events..

18.5.3 Notwithstanding these improvements, projected increased traffic flow, coupled with maintaining the same number of lanes available to traffic, means that the resulting driver stress classification on each section of road generally either remains the same or increases in the Do-Something compared to the Do- Minimum scenarios.

18.6 Residual Impacts

View from the Road

18.6.1 The expected views for travellers are described for both the online and offline sections of the proposed scheme and compared with views gained from the existing A90 and M9 where the proposed scheme would be constructed online.

18.6.2 Views from the proposed scheme during the winter year of opening and the summer after 15 years are described in Tables 18.5, 18.6 and 18.7 and shown on Figures 18.1 and 18.2 as follows:

- Table 18.5 shown on Figure 18.1a-d and 18.2a-d.
- Table 18.6 shown on Figure 18.1e(ii) and 18.2e(ii).

- Table 18.7 shown on Figure 18.1e(i), 18.1f, 18.2e(i) and18.2f.

18.6.3 Views in the winter year of opening take account of earthworks and proposed planting, but without the screening effects of mature planting, while views in the summer 15 years after opening assume that the proposed planting will have become established and will limit views.

18.6.4 The overall percentages for Open, Intermittent, Restricted and No View categories, shown at the end of Tables 18.5, 18.6 and 18.7, are based on chainages which define the locations for the different categories of view identified within each section of the proposed scheme. However, the resulting overall percentages should be regarded as an indicative, rather than exact, quantity of the range of views available.

18.6.5 Table 18.5 describes the impacts that the proposed scheme would have upon views from the online section of the A90 between Admiralty Junction and Ferrytoll Junction, with descriptions of the current views compared with any changes in the winter year of scheme opening and during the summer 15 years after opening.

18.6.6 Table 18.5 also describes the impacts upon views from the proposed scheme between Ferrytoll Junction and Scotstoun in the winter year of scheme opening and during the summer 15 years after opening. This section would be offline and therefore no comparison with views from the existing A90 is made.

18.6.7 Table 18.6 describes the impacts that the proposed scheme would have upon views from the M9 Spur to and including the new and upgraded slip roads of M9 Junction 1A in the winter year of scheme opening and during the summer 15 years after opening. The slip roads that would be introduced as part of the proposed scheme at M9 Junction 1A would be offline and therefore no comparison with views from the existing M9 Junction 1A is made.

18.6.8 Table 18.7 describes the impacts that the proposed scheme would have upon views from the online section of the M9 between the scheme tie-in at Ross's Plantation and the tie-in at the Newbridge Junction, with descriptions of the current views compared to any changes in the winter year of scheme opening and during the summer 15 years after opening.

A90 Admiralty Junction to Ferrytoll Junction (online) and Ferrytoll Junction to Scotstoun (offline)

18.6.9 In the winter year of opening, approximately 25.1% of the proposed scheme and Main Crossing would have Open views and 42.1% would have Intermittent views. To the north of the Firth of Forth, open views would generally be gained over the reclaimed land of St. Margaret's Marsh and towards the Firth of Forth or over the rolling farmland of Castlandhill with minor disruption to views by shallow cuttings or existing vegetation. The slender structural elements of the Main Crossing and shuttered wind deflectors would allow travellers to maintain views along the Firth of Forth. Open views from the southern route would generally occur where the proposed scheme crosses the rolling farmland around South Queensferry, with views towards the town or across the Dundas Estate.

18.6.10 North of Ferrytoll Junction, views would be limited where the northern route cuts through the hills around Inverkeithing and Rosyth, while obstruction to views from the southern route would be limited to areas where the proposed scheme would be in cutting at the approach to the Queensferry Junction or adjacent to false cuttings provided for noise attenuation and visual screening. As a result, approximately 6.6% of views from the proposed scheme would be Restricted and 26.2% would have No view.

18.6.11 The development of the woodland mitigation planting to screen properties and replace lost habitat would reduce Open views by the summer 15 years after opening to approximately 14.3% while the Intermittent views would increase to 47.2%. The percentage of Restricted views would increase to approximately 10.2% and the sections with No view to 28.3%, although proposed woodland on cuttings would reduce the sense of enclosure.

M9 Spur to M9 Junction 1A slip roads (offline)

18.6.12 From the M9 Spur, to and including the new and upgraded slip roads of M9 Junction 1A, the majority of the proposed M9 Junction 1A improvement would gain views across the surrounding rolling farmland during the winter year of opening due to the elevation of the roads on embankments. This would result in approximately 87% of the road having Open views and 3% having Intermittent views. The existing woodland to the east of the junction around the Swine Burn would obstruct views from the slip road, resulting in approximately 10% of the road having Restricted views. By the summer after 15 years, the development of the proposed mitigation planting would screen many of the views, reducing the percentage of Open views to approximately 28.8%. Intermittent and Restricted views would increase to 23.2% and 48%, respectively.

M9 (online)

18.6.13 The changes to the M9 would be unlikely to significantly alter the existing views from the road, although the revised earthworks in several areas would require the removal of some existing scrub and mixed woodland vegetation. During the winter year of opening, the extensive embankments would provide 57.5% of the road with Open views across the surrounding farmland and approximately 25.3% of the proposed scheme with Intermittent views. The screening provided by cuttings, existing woodland and a noise barrier near Kirkliston would produce approximately 5.4% Restricted views and 11.8% No view. By the summer 15 years after opening, the development of proposed mitigation planting would reduce Open views to approximately 53.2% and Intermittent views to 13%. The percentage of Restricted views would increase to approximately 22%, while the percentage of the proposed scheme at this location with No views would remain at 11.8%.

Driver Stress

18.6.14 As stated in paragraph 18.4.6, driver stress increases in the southbound direction in the following sections:

- Admiralty – Ferrytoll; and
- M9 Spur.

18.6.15 All other sections and directions retain the same level of driver stress in the Do-Something as in the Do-Minimum.

Summary of Overall Residual Impacts

18.6.16 The majority of the proposed scheme would have views from the road to the surrounding landscape both during the winter year of opening and 15 years later. As the proposed mitigation planting matures, these views would become more screened in places, but open and intermittent views would continue to prevail.

18.6.17 North of the Firth of Forth, views for vehicle travellers would remain similar to those from the existing A90, with steep rock cuttings, which channel views towards the approach to the Main Crossing.

18.6.18 Views for travellers on the Main Crossing would also be similar to those from the Forth Road Bridge, with scenic, panoramic views across the Firth of Forth.

18.6.19 However, the existing suburban views from the existing A90, south of the Forth Road Bridge, would be replaced by a range of more open, attractive views from the southern route, across rolling farmland and into the designed wooded landscape of Dundas.

18.6.20 Overall, the proposed scheme would improve views for drivers and provide a stimulating and scenic journey. However, driver stress would tend to increase because of the increased future traffic volumes using the same number of available lanes.

Table 18.5: View from the Road: A90 Admiralty Junction to Ferrytoll Junction (online) and Ferrytoll Junction to Scotstoun (offline)

Chainage	Landscape/ Settlement Character Area(s)	View from Northbound or Southbound Carriageway	View from existing A90-online section	View from Proposed Road, Winter Year of Opening	View from Proposed Road, Summer 15 Years After Opening
Admiralty Junction to Ferrytoll Junction (online)					
ch9340 (M90 Tie-In) - 9100	Existing Road Corridor & North Inverkeithing Wooded Lowland Hill and Valley	Southbound	**Restricted view:** Views are obstructed by the rising topography of Fairy Kirk hill, with existing mixed woodland across the slopes helping to soften the sense of enclosure.	**Restricted view:** Views would be obstructed by the rising topography of Fairy Kirk hill, with existing mixed woodland across the slopes helping to soften the sense of enclosure.	**Restricted view:** Views would be obstructed by the rising topography of Fairy Kirk hill, with increased screening by the summer foliage of the existing mixed woodland across the slopes helping to soften the sense of enclosure.
ch9340 (M90 Tie-In) - 9160	Existing Road Corridor & Rosyth Urban	Northbound	**Intermittent view:** Limited views towards Rosyth through a belt of existing mature trees.	**Intermittent view:** Limited views towards Rosyth through a belt of existing mature trees adjacent to the slip road due to a more elevated carriageway.	**Restricted view:** The summer foliage of the existing trees adjacent to the slip road would obstruct the majority of views towards Rosyth.
ch9160-8700	Existing Road Corridor, Rosyth Urban & Castlandhill Coastal Hill	Northbound	**No view:** The road is in deep cutting through the eastern slopes of Castlandhill. The cutting slopes are covered with rough grass and scrub vegetation.	**No view:** The road would be situated in deep cutting through the eastern slopes of Castlandhill. Cutting slopes would be seeded with grass with new scrub woodland around the Dunfermline Wynd overbridge.	**No view:** The road would be situated in deep cutting through the eastern slopes of Castlandhill. Established scrub woodland and natural regeneration on the cutting slopes would help to soften appearance of the cutting.
ch9100-8700	Existing Road Corridor & North Inverkeithing Wooded Lowland Hill and Valley	Southbound	**No view:** The road is situated in deep cutting through the eastern slopes of Castlandhill. Existing scrub vegetation across the cutting slopes helps to soften appearance of cutting and reduce sense of enclosure.	**No view:** The road would be situated in deep cutting through the eastern slopes of Castlandhill. Existing scrub vegetation across the cutting slopes would help to soften the appearance of the cutting and reduce the sense of enclosure.	**No view:** The road would be situated in deep cutting through the eastern slopes of Castlandhill. Existing scrub vegetation across the cutting slopes would help to soften the appearance of the cutting and reduce the sense of enclosure.
ch8700-8540	Existing Road Corridor & North Inverkeithing Wooded Lowland Hill and Valley	Southbound	**Restricted view:** Views to the side of the road are limited by the slopes of Muckle Hill with short range views across an open field to scrub woodland around nearby housing.	**Restricted view:** Views to the side of the road would be limited by the slopes of Muckle Hill with short range views across an open field to scrub woodland around nearby housing. Travellers would begin to gain views along the carriageway towards the Main Crossing.	**Restricted view:** Views to the side of the road would be limited by the slopes of Muckle Hill with short range views across an open field to scrub woodland around nearby housing. Travellers would begin to gain views along the carriageway towards the Main Crossing.
ch8700-8550	Existing Road Corridor & Castlandhill Coastal Hill	Northbound	**Intermittent view:** Shallow cutting allows limited views to side of road, although they are limited in range by the rising topography of Castlandhill.	**Intermittent view:** Shallow cutting would allow limited views to side of road, although limited in range by the rising topography of Castlandhill. New scrub woodland planting adjacent to the road.	**Intermittent view:** Views towards Castlandhill would be partially disrupted by established scrub woodland adjacent to the carriageway.
ch8550-8150	Existing Road Corridor & Castlandhill Coastal Hill	Northbound	**Open view:** Views to the west of the road towards the mature woodland on Whinny Hill and across the rolling farmland of Castlandhill.	**Open view:** Views to the west of the road towards the mature woodland on Whinny Hill and across the rolling farmland of Castlandhill. New scrub woodland planting between the revised merge slip road and realigned Castlandhill Road.	**Intermittent view:** The established scrub woodland adjacent to the road would partially disrupt views to the west.

Chainage	Landscape/ Settlement Character Area(s)	View from Northbound or Southbound Carriageway	View from existing A90-online section	View from Proposed Road, Winter Year of Opening	View from Proposed Road, Summer 15 Years After Opening
ch8540 – 8170	Existing Road Corridor, North Inverkeithing Wooded Lowland Hill and Valley & South Inverkeithing Bay Industrial	Southbound	**No view:** Views to the side of the road are contained by a deep cutting through Muckle Hill. Exposed rock cuttings adjacent to the road create a strong sense of enclosure. Existing scrub vegetation on the rock ledges help to soften the appearance of the rock face.	**No view:** Views to the side of the road would be contained by a deep cutting through Muckle Hill. Exposed rock cuttings adjacent to the road would create a strong sense of enclosure. New rock cuttings would be formed to achieve a natural appearance.	**No view:** Deep cutting through Muckle Hill would prevent any views out, although the weathering of the new rock cuttings and natural regeneration would soften the sense of enclosure.
Ferrytoll Junction to Scotstoun (offline)					
ch8170-7700	Existing Road Corridor, South Inverkeithing Bay Industrial & Ferry Hills Coastal Hill	Southbound	Offline therefore no comparison with views from existing A90.	**Open view:** The position of the main carriageway on embankment would allow views across the Ferrytoll Park & Ride car park towards the railway viaduct to the south of Inverkeithing and the Ferry Hills, with new scrub woodland around the edge of the car park.	**Open view:** The development of the scrub woodland around the park & ride would help to screen views of the car park structure but would continue to allow views towards the railway viaduct and the Ferry Hills.
ch8150-7930	Existing Road Corridor & Castlandhill Coastal Hill	Northbound	Offline therefore no comparison with views from existing A90.	**No view:** A rock outcrop between the main carriageway and the realigned northbound merge slip road would obstruct views to the side of the road, assisted by new scrub woodland planting across the outcrop.	**No view:** A rock outcrop between the main carriageway and the realigned northbound merge slip road would obstruct views to the side of the road. Established scrub woodland planting across the outcrop would help to soften the appearance of the landform.
ch7930-7500	Existing Road Corridor, Castlandhill Coastal Hill & North Queensferry Coastal Flat	Northbound	Offline therefore no comparison with views from existing A90	**Open view:** The road would be situated on embankment, providing elevated views across Ferrytoll Junction and the Dunfermline WWTW towards the Firth of Forth. Limited disruption to views by existing trees around WWTW and mixed and scrub woodland planting around the junction and adjacent to the carriageway.	**Intermittent view:** The summer foliage of the mature trees around the WWTW would be enhanced by the development of the mixed and scrub woodland around the junction which would partially disrupt views towards the Firth of Forth.
ch7700-7500	Existing Road Corridor & Ferry Hills Coastal Hills	Southbound	Offline therefore no comparison with views from existing A90	**Intermittent view:** The new rock cutting to the east of the road would allow limited views towards the Ferry Hills.	**Intermittent view:** The weathering of the rock face and the development of natural regeneration would help to soften the appearance of the cutting.
ch7500-7100	Existing Road Corridor & Ferry Hills Coastal Hills	Southbound	Offline therefore no comparison with views from existing A90.	**Open view:** Elevated position of the road on viaduct would allow clear views across the new access to the Forth Road Bridge towards existing scrub woodland across Ferry Hills, with new mixed woodland planting around roads below viaduct.	**Open view:** The established mixed woodland would partially screen views of the access roads for the Forth Road Bridge but would not affect views to the Ferry Hills from the viaduct.

Chainage	Landscape/ Settlement Character Area(s)	View from Northbound or Southbound Carriageway	View from existing A90-online section	View from Proposed Road, Winter Year of Opening	View from Proposed Road, Summer 15 Years After Opening
ch7500-7100	Existing Road Corridor & North Queensferry Coastal Flat	Northbound	Offline therefore no comparison with views from existing A90.	**Open view:** Views would be available across St Margaret's Marsh towards the Firth of Forth, WWTW and the Rosyth Europarc due to elevation of the road on viaduct. The existing woodland around St Margaret's Hope (also known as Admiralty House) would result in some minor disruption to views, with new mixed and scrub woodland planting along realigned B981.	**Open view:** The established mixed woodland along the B981 would help to partially screen views of the WWTW, but would not obstruct views towards the Firth of Forth.
ch7100-6900	Ferry Hills Coastal Hills	Southbound	Offline therefore no comparison with views from existing A90.	**Restricted view:** The road would be in cutting as it crosses the small hill above St Margaret's Hope, which would partially obstruct views to the side of the road. The remaining mature woodland adjacent to the road within the estate boundary and around the Queensferry Hotel would increase the obstruction to views, with limited views available towards the Forth Road Bridge. Travellers would gain views along the carriageway across the Main Crossing.	**Restricted view:** The summer foliage of the woodland adjacent to the road would help to soften the enclosure of the views but would continue to allow limited views out.
ch7100-6960	Ferry Hills Coastal Hills	Northbound	Offline therefore no comparison with views from existing A90.	**Restricted view:** Views to the side of the road would be largely contained by the cutting through the small hill above St Margaret's Hope and the existing woodland within the estate, with limited views available through the trees.	**Restricted view:** The summer foliage of the woodland adjacent to the road would help to soften the enclosure of the views but would continue to allow limited views out.
ch6960-4330	Firth of Forth	Northbound	Offline therefore no comparison with views from existing A90.	**Intermittent view:** The structure of the Main Crossing and viaducts, including the safety barriers and wind deflectors, would partially disrupt views to the west along the Firth of Forth, but travellers would be able to see along the estuary towards Hopetoun House and Rosyth Europarc and Naval Base.	**Intermittent view:** The structure of the Main Crossing and viaducts, including the safety barriers and wind deflectors, would partially disrupt views to the west along the Firth of Forth, but travellers would be able to see along the estuary towards Hopetoun House and Rosyth Europarc and Naval Base.
ch6900-4330	Firth of Forth	Southbound	Offline therefore no comparison with views from existing A90.	**Intermittent view:** The structure of the Main Crossing and viaducts, including the safety barriers and wind deflectors, would partially disrupt views to the east along the Firth of Forth, but travellers would be able to see the Forth Road Bridge and Forth Rail Bridge, as well as seeing North Queensferry and South Queensferry.	**Intermittent view:** The structure of the Main Crossing and viaducts, including the safety barriers and wind deflectors, would partially disrupt views to the east along the Firth of Forth, but travellers would be able to see the Forth Road Bridge and Forth Rail Bridge, as well as seeing North Queensferry and South Queensferry.

Chainage	Landscape/ Settlement Character Area(s)	View from Northbound or Southbound Carriageway	View from existing A90-online section	View from Proposed Road, Winter Year of Opening	View from Proposed Road, Summer 15 Years After Opening
ch4330-3400	Duddingston Lowland Hill and Valley Farmland	Southbound	Offline therefore no comparison with views from existing A90.	**No view:** The road would be running in cutting as it crosses the Echline Fields, with views further enclosed by the false cutting and noise barrier adjacent to the carriageway. The road would remain in cutting as passes beneath the Queensferry Junction, with views enclosed by the slip roads for the junction as it passes beneath the A904.	**No view:** The road would be running in cutting as it crosses the Echline Fields, with views further enclosed by the false cutting and noise barrier adjacent to the carriageway. The road would remain in cutting as passes beneath the Queensferry Junction, with views enclosed by the junction slip roads as it passes beneath the A904.
ch4330-3000	Duddingston Lowland Hill and Valley Farmland	Northbound	Offline therefore no comparison with views from existing A90.	**No view:** Views to the side of the road would be contained by a false cutting and the slip roads for the Queensferry Junction as the carriageway passes beneath the A904, before continuing in cutting as it crosses the Echline Fields, with additional enclosure by a false cutting and noise barrier. Travellers would gain views along the carriageway to the Firth of Forth and the Main Crossing.	**No view:** Views to the side of the road would be contained by a false cutting and the slip roads for the Queensferry Junction as the carriageway passes beneath the A904, before continuing in cutting as it crosses the Echline Fields, with additional enclosure by a false cutting and noise barrier. Travellers would gain views along the carriageway to Firth of Forth and Main Crossing.
ch3400-3000	Duddingston Lowland Hill and Valley Farmland	Southbound	Offline therefore no comparison with views from existing A90.	**Intermittent view:** The road would be in shallow cutting as it crosses the rolling farmland to the north of Dundas Estate, with occasional views towards the edge of South Queensferry and the towers of the Forth Road Bridge and Forth Rail Bridge.	**Intermittent view:** The road would be in shallow cutting as it crosses the rolling farmland to the north of Dundas Estate, with occasional views towards the edge of South Queensferry and the Forth Road Bridge and Forth Rail Bridge.
ch3000-2830	Duddingston Lowland Hill and Valley Farmland	Southbound	Offline therefore no comparison with views from existing A90.	**Open view:** The road would be at grade or on low embankment, allowing views across rolling farmland towards the edge of South Queensferry and towers of the Forth Road Bridge and Forth Rail Bridge, beyond new hedgerow planting beside the road.	**Open view:** The development of the hedgerow beside the road would cause a minor disruption to views from the at-grade sections but views travellers would retain views towards South Queensferry.
ch3000-2780	Duddingston Lowland Hill and Valley Farmland & Dundas Designed Wooded Landscape	Northbound	Offline therefore no comparison with views from existing A90.	**Restricted view:** The majority of views would be obstructed by the established woodland of the Echline Strip adjacent to the road, with limited views available through the trees and new mixed woodland planting to replace lost woodland.	**No view:** The development of the mixed woodland planting and the summer foliage of the mature woodland within the Echline Strip would obstruct all views to the side of the road, although the woodland would create a soft edge to the boundary which would reduce sense of enclosure.
ch2830-2650	Dundas Designed Wooded Landscape	Southbound	Offline therefore no comparison with views from existing A90.	**Intermittent view:** The remaining section of the Echline Strip on the northern side of the road would disrupt views to the north of the road towards South	**Restricted view:** The development of the mixed woodland planting adjacent to the road and the summer foliage of the mature

Chainage	Landscape/ Settlement Character Area(s)	View from Northbound or Southbound Carriageway	View from existing A90-online section	View from Proposed Road, Winter Year of Opening	View from Proposed Road, Summer 15 Years After Opening
				Queensferry and the Forth Road Bridge, assisted by new mixed woodland planting along woodland edge.	woodland in the Echline Strip would screen the majority of views out from the road.
ch2780-2250	Dundas Designed Wooded Landscape	Northbound	Offline therefore no comparison with views from existing A90.	**Open view:** The road would be situated on embankment with views across the adjacent farmland to the mature woodland around Dundas Castle, through a new line of standard tree planting along the road.	**Intermittent view:** The established line of trees along the road would partially disrupt views across the adjacent farmland.
ch2650-2480	Duddingston Lowland Hill and Valley Farmland & Dundas Designed Wooded Landscape	Southbound	Offline therefore no comparison with views from existing A90.	**Open view:** The position of the road on embankment would allow views across the adjacent rolling farmland towards South Queensferry, the Forth Road Bridge and the Forth Rail Bridge, over new hedgerow planting along the embankment.	**Open view:** The position of the road on embankment would allow views across the adjacent rolling farmland towards South Queensferry, the Forth Road Bridge and the Forth Rail Bridge. The established hedgerow would not affect views.
ch2480-2200	Duddingston Lowland Hill and Valley Farmland & Dundas Designed Wooded Landscape	Southbound	Offline therefore no comparison with views from existing A90.	**Intermittent view:** Views to the side of the road would be partially obstructed by a belt of existing woodland at the edge of the Dundas Estate with filtered views towards South Queensferry and the Forth Road Bridge through new mixed woodland planting adjacent to the road to reinstate the woodland edge.	**Restricted view:** The development of the mixed woodland planting adjacent to the road and the summer foliage of the mature woodland would screen the majority of views towards South Queensferry and the Forth Road Bridge.
ch2250-1680	Duddingston Lowland Hill and Valley Farmland & Dundas Designed Wooded Landscape	Northbound	Offline therefore no comparison with views from existing A90.	**No view:** Views out from the road would be contained by the false cutting and noise barrier in front of Dundas Home Farm, realigned A8000 overbridge and new mixed woodland planting on the false cutting and overbridge embankments.	**No view:** Views out from the road would be contained by the false cutting and noise barrier in front of Dundas Home Farm, realigned A8000 overbridge and established mixed woodland planting on the false cutting and overbridge embankments.
ch2200-1850	Duddingston Lowland Hill and Valley Farmland & Dundas Designed Wooded Landscape	Southbound	Offline therefore no comparison with views from existing A90.	**Open view:** The road would be on embankment allowing views to the Dakota Hotel and across Ferry Muir to South Queensferry, with views along the former A90 to the Forth Road Bridge.	**Open view:** The road would be on embankment allowing views to the Dakota Hotel and across Ferry Muir to South Queensferry, with views along the former A90 to the Forth Road Bridge.
ch1850-1700	Duddingston Lowland Hill and Valley Farmland & Existing Road Corridor	Southbound	Offline therefore no comparison with views from existing A90.	**Intermittent view:** Views to the side of the road would be disrupted by the embankments and structure of the realigned A8000 overbridge, with new mixed woodland planting between the road and the new bus link.	**Restricted view:** The development of the mixed woodland adjacent to the road would increase the screening by the overbridge embankments to disrupt the majority of views.

Chainage	Landscape/ Settlement Character Area(s)	View from Northbound or Southbound Carriageway	View from existing A90-online section	View from Proposed Road, Winter Year of Opening	View from Proposed Road, Summer 15 Years After Opening
ch1700-1570	Existing Road Corridor & Craigbrae Lowland Hill and Valley Farmland	Southbound	Offline therefore no comparison with views from existing A90.	**Open view:** Travellers would gain views over the bus link and across open ground to the existing trees around Scotstoun House.	**Open view:** Travellers would gain views over the bus link and across open ground to the existing trees around Scotstoun House.
ch1680-1440	Existing Road Corridor & Dundas Designed Wooded Landscape	Northbound	**Open view:** Views across the adjacent open field, limited only by the avenue trees along the disused road from Dalmeny.	**Open view:** Views would be across an adjacent open field to the new bus link connecting to the A8000, with new avenue tree planting beside the bus link.	**Open view:** Views would be across an adjacent open field to the new bus link connecting to the A8000. The development of the avenue trees beside the bus link would not limit the range of the available views.
ch1570-1450	Existing Road Corridor & Craigbrae Lowland Hill and Valley Farmland	Southbound	**Restricted view:** A stand of mainly coniferous existing trees adjacent to the road obstructs the majority of views to the side of the road.	**Restricted view:** A stand of mainly coniferous existing trees adjacent to the road would obstruct the majority of views to the side of the road, with new mixed woodland planting adjacent to the bus link to reinstate the woodland edge.	**No view:** The development of the mixed woodland planting along the edge of the road would increase the screening of the existing woodland to contain views.
ch1450-1175 (A90 Tie-In)	Existing Road Corridor & Craigbrae Lowland Hill and Valley Farmland	Southbound	**Open view:** Views to the side of the road are generally open with views towards the housing at the southern edge of South Queensferry.	**Open view:** Views to the side of the road would generally be open with views towards the housing at the southern edge of South Queensferry, with minor disruption by the earthworks along the bus link and new hedgerow with trees along the edge of the bus link.	**Intermittent view:** The development of the hedgerow and hedgerow trees along the bus link would cause minor disruption of views towards the edge of South Queensferry.
ch1440-1300	Existing Road Corridor & Dundas Designed Wooded Landscape	Northbound	**Intermittent view:** Views to the side of the road are partially disrupted by a stand of established woodland on the field boundary.	**Intermittent view:** Views to the side of the road would be partially disrupted by a stand of established woodland on the field boundary.	**Restricted view:** The summer foliage of the established woodland on the field boundary would increase the containment of views.
ch1300-1175 (A90 Tie-In)	Existing Road Corridor & Dundas Designed Wooded Landscape	Northbound	**Open view:** Travellers gain views towards the open fields adjacent to the A90/ M9 Spur.	**Open view:** Travellers would gain views to the side of the road over the bus link and new hedgerow with trees along the edge of the towards the open fields adjacent to the A90/ M9 Spur.	**Intermittent view:** The development of the hedgerow and hedgerow trees along the bus link would cause minor disruption of views across the adjacent farmland.
Overall % of the A90 with:					
Open view			1040m 31.9%	4090m 25.1%	2330m 14.3%
Intermittent view			470m 14.4%	6880m 42.1%	7710m 47.2%
Restricted View			520m 16.0%	1080m 6.6%	1670m 10.2%
No view			1230m 37.7%	4280m 26.2%	4620m 28.3%

Table 18.6: View from the Road: M9 Spur to M9 Junction 1A slip roads (offline)

Chainages	Landscape/ Settlement Character Area(s)	View from Northbound or Southbound Carriageway	View from Proposed Road, Winter Year of Opening	View from Proposed Road, Summer 15 Years After Opening
ch0-520 M9 Spur	Existing Road Corridor, Craigbrae Lowland Hill and Valley Farmland & Kirkliston Urban	Southbound	**Open view:** The road would be elevated on embankment providing views across adjacent dwellings in Kirkliston, with new mixed woodland planting along the embankment.	**Restricted view:** The development of the mixed woodland planting adjacent to the road would obstruct the majority of views across Kirkliston, with limited views through the trees.
ch520-400 M9 Spur southbound to M9 eastbound link	Existing Road Corridor & Kirliston Urban	Southbound	**Restricted view:** Views from the slip road would be largely obstructed by the existing woodland around the Swine Burn, which would screen the majority of views through to the housing at the western edge of Kirkliston.	**Restricted view:** Views from the slip road would be largely obstructed by the existing woodland around the Swine Burn, which would screen the majority of views through to the housing at the western edge of Kirkliston.
ch0-120 M9 eastbound to M9 Spur northbound link	Existing Road Corridor & Duddingston Lowland Hill and Valley Farmland	Northbound	**Open view:** The embankments for the northbound diverge slip road and for the M9 Spur would allow views across the adjacent farmland towards Humbie Farm and an adjacent shelterbelt, with new mixed and scrub woodland planting adjacent to the road and along the Swine Burn.	**Restricted view:** The development of the mixed and scrub woodland adjacent to the road and around the Swine Burn would screen the majority of views from the road, with filtered views through to the surrounding farmland.
ch120-250 M9 eastbound to M9 Spur northbound link	Existing Road Corridor & Duddingston Lowland Hill and Valley Farmland	Northbound	**Intermittent view:** The existing woodland of the shelterbelt and along the Swine Burn would partially obstruct views to the side of the road, with limited views of the farmland to the south of Humbie Farm.	**Intermittent view:** The summer foliage of the existing woodland of the shelterbelt and along the Swine Burn would increase the screening of views to the side of the road, but would still allow limited views of the farmland to the south of Humbie Farm.
ch520-1160 M9 Spur southbound to M9 westbound link	Existing Road Corridor & Overton Lowland Plain	Southbound	**Open view:** The road would be situated on embankment which would allow views across the surrounding farmland. Existing woodland adjacent to ch0 to 200 would cause minor disruption to views, with new hedgerow planting on the south side of the M9 adjacent to the slip roads.	**Open view:** The road would be situated on embankment which would allow views across the surrounding farmland. Existing woodland adjacent to ch0 to 200 would cause minor disruption to views. Established hedgerow planting on the south side of the M9 adjacent to the slip roads would not affect views.
ch520-0 M9 westbound to M9 Spur northbound link	Existing Road Corridor & Overton Lowland Plain	Northbound	**Open view:** The slip road would be rising on embankment as it curves around to the M9 Spur, with views across the farmland within the slip road and to the north of the M9, and to the west along the M9. New mixed and scrub woodland around the Swine Burn to the north of the M9.	**Intermittent view:** The development of the mixed and scrub woodland around the Swine Burn would disrupt views to the north of the road. Views would remain open along the M9.
Overall % of the M9 Spur M9 and Junction 1A slip roads with: Open view Intermittent view Restricted View No view			 3750m 87.0% 130m 3.0% 430m 10.0% 0m	 1240m 28.8% 1000m 23.2% 2070m 48.0% 0m

Table 18.7: View from the Road: M9 (online)

Chainages	Landscape/ Settlement Character Area(s)	View from Eastbound or Westbound Carriageway	View from existing M9	View from Proposed Road, Winter Year of Opening	View from Proposed Road, Summer 15 Years After Opening
ch2800 (M9 Tie-In) - 2390	Existing Road Corridor & Duddingston Lowland Hill and Valley Farmland	Eastbound	**Open view:** The position of the road on embankment allows views across the adjacent open farmland as the land rises up around the Humbie Reservoir and the surrounding woodland.	**Open view:** The position of the road on embankment would allow views across the adjacent open farmland as the land rises up around the Humbie Reservoir and the surrounding woodland.	**Open view:** The position of the road on embankment would allow views across the adjacent open farmland as the land rises up around the Humbie Reservoir and the surrounding woodland.
ch2800 (M9 Tie-In) - 2530	Existing Road Corridor & Overton Lowland Plain	Westbound	**Intermittent view:** The road is situated on embankment but views from the road are partially disrupted by the woodland of Ross's Plantation and surrounding scrub vegetation, although the elevation of the carriageway on embankment provides views to the south across the farmland around Newliston Estate.	**Intermittent view:** The road would be situated on embankment but views from the road would be partially disrupted by the woodland of Ross's Plantation and surrounding scrub vegetation, although the elevation of the carriageway on embankment would provide views to the south across the farmland around Newliston Estate. New scrub woodland planting around the detention basin would not affect views.	**Intermittent view:** The road would be situated on embankment but views from the road would be partially disrupted by the woodland of Ross's Plantation and surrounding scrub vegetation, although the elevation of the carriageway on embankment would provide views to the south across the farmland around Newliston Estate. The development of the scrub woodland around the detention basin would partially obstruct views.
ch2530-2040	Existing Road Corridor & Overton Lowland Plain	Westbound	**Open view:** The road is on embankment with views across the gently rolling farmland to the north of the Newliston Estate.	**Open view:** The road would be on embankment with views across the gently rolling farmland to the north of the Newliston Estate, with minor disruption to views from the embankments of the slip road.	**Open view:** The road would be on embankment with views across the gently rolling farmland to the north of the Newliston Estate, with minor disruption to views from the embankments of the slip road.
ch2390-2180	Existing Road Corridor & Duddingston Lowland Hill and Valley Farmland	Eastbound	**Intermittent view:** The existing woodland beside Swine Burn partially obstrucst views to the side of the road, with limited views of the farmland to the south of Humbie Farm.	**Intermittent view:** The existing woodland beside Swine Burn would partially obstruct views to the side of the road, with limited views of the farmland to the south of Humbie Farm.	**Intermittent view:** The summer foliage of the existing woodland beside Swine Burn would increase the screening of views to the side of the road, but would still allow limited views of the farmland to the south of Humbie Farm.
ch2180-1720	Existing Road Corridor & Duddingston Lowland Hill and Valley Farmland	Eastbound	**No view:** Views towards Humbie Farm are obstructed by the existing scrub and coniferous woodland along the embankments of the road.	**Intermittent view:** Views towards Humbie Farm would be partially disrupted by the embankments of the diverge slip road and new mixed and scrub woodland planting along the embankments and around Swine Burn.	**Restricted view:** The development of the mixed and scrub woodland along the embankment and around the Swine Burn would increase the screening of views to the north towards Humbie Farm.
ch2040-1800	Existing Road Corridor & Overton Lowland Plain	Westbound	**Open view:** Travellers gain views across the existing junction slip roads to the south towards the woodland to the north of the Newliston Estate.	**Open view:** Travellers would gain views across the slip roads of the upgraded junction and new scrub woodland planting to the south towards the woodland to the north of the Newliston Estate.	**Restricted view:** The development of the scrub woodland planting within the upgraded junction would contain the majority of views from the road.

Chainages	Landscape/ Settlement Character Area(s)	View from Eastbound or Westbound Carriageway	View from existing M9	View from Proposed Road, Winter Year of Opening	View from Proposed Road, Summer 15 Years After Opening
ch1800-1720	Existing Road Corridor & Overton Lowland Plain	Westbound	**Open view:** Views across the field within the slip roads of the existing junction, although views are limited in range due to slip-road embankments and the mature woodland around Lindsay's Craigs.	**Open view:** Views would be across the field within the slip roads of the upgraded junction, limited in range due to the embankments of the slip road and the mature woodland around Lindsay's Craigs.	**Open view:** Views would be possible across the field within the slip roads of the upgraded junction, limited in range due to the embankments of the slip road and the mature woodland around Lindsay's Craigs.
ch1720-1470	Existing Road Corridor	Eastbound	**Intermittent view:** Views are partially disrupted by the embankments of the slip road and the overbridge, with additional disruption by the existing trees around the junction.	**Intermittent view:** Views would be partially disrupted by the embankments of the widened slip road and the overbridge, the existing trees around the junction and new scrub woodland planting adjacent to the junction.	**Intermittent view:** Views would be partially disrupted by the embankments of the widened slip road and the overbridge, the existing trees around the junction and matured scrub woodland planting adjacent to the junction.
ch1720-1300	Existing Road Corridor, Overton Lowland Plain & Newliston Designed Wooded Landscape	Westbound	**No view:** The road is in cutting as it runs down the hill towards Junction 1A, which contains views.	**No view:** The road would be in cutting as it runs down the hill towards Junction 1A, which would contain views, softened by new mixed woodland planting on cutting slopes to replace lost woodland.	**No view:** The established mixed woodland on the cutting slopes would increase the level of screening but would help to reduce the sense of enclosure.
ch1470-1230	Existing Road Corridor & Kirkliston Urban	Eastbound	**No view:** Views to the side of the road are obstructed by cutting and the existing woodland around the Niddry Burn.	**No view:** Views to the side of the road would be obstructed by cutting, the existing woodland around the Niddry Burn and new mixed woodland along the cutting.	**No view:** Views to the side of the road would be obstructed by cutting, the existing woodland around the Niddry Burn and the development of the mixed woodland along the cutting would help to reduce the sense of enclosure.
ch1300-1000	Existing Road Corridor & Newliston Designed Wooded Landscape	Westbound	**Restricted view:** The majority of views are contained by the existing woodland around the edge of the Newliston Estate.	**Restricted view:** The majority of views would be contained by the existing woodland around the edge of the Newliston Estate, with occasional views over the SUDS detention basin through the trees and new mixed woodland planting around the detention basin and new scrub woodland planting along the cuttings.	**Restricted view:** The development of the mixed and scrub woodland planting beside the road would increase the level of screening from the summer foliage of the existing trees, but limited views would remain available across the adjacent farmland.
ch1230-1000	Existing Road Corridor, Kirkliston Urban & River Almond Lowland Plain	Eastbound	**Intermittent view:** The road moves from cutting onto embankment, although views are partially disrupted by the existing woodland around the edge of Kirkliston.	**Intermittent view:** The road would move from cutting onto embankment, although views would be partially disrupted by the existing woodland and new scrub woodland at the edge of Kirkliston and by a noise barrier beside the carriageway.	**Restricted view:** The summer foliage of the existing woodland, matured scrub woodland at Kirkliston and noise barrier would obstruct the majority of views.

Chainages	Landscape/ Settlement Character Area(s)	View from Eastbound or Westbound Carriageway	View from existing M9	View from Proposed Road, Winter Year of Opening	View from Proposed Road, Summer 15 Years After Opening
ch1000 – 0 (M9 Tie-In)	Existing Road Corridor & River Almond Lowland Plain	Eastbound	**Open view:** The road is on embankment or at grade, providing views across the adjacent farmland around the River Almond.	**Open view:** The road would be on embankment or at grade, providing views across the adjacent farmland around the River Almond.	**Open view:** The road would be on embankment or at grade, providing views across the adjacent farmland around the River Almond.
ch1000 – 0 (M9 Tie-In)	Existing Road Corridor	Westbound	**Open view:** The road is situated on embankment or at grade which allows views across the surrounding open farmland around the River Almond.	**Open view:** The road would be situated on embankment or at grade which would allow views across the surrounding open farmland around the River Almond.	**Open view:** The road would be situated on embankment or at grade which would allow views across the surrounding open farmland around the River Almond.
Overall % of the M9 with:					
Open view			3220m 57.5%	3220m 57.5%	2980m 53.2%
Intermittent view			960m 17.1%	1420m 25.3%	730m 13.0%
Restricted View			300m 5.4 %	300m 5.4%	1230m 22.0%
No view			1120m 20.0%	6560m 11.8%	660m 11.8%

Driver Stress

18.6.21 As the mitigation measures to reduce driver stress are considered to be provided by the design, as described in paragraph 18.5.2, there is no change to the potential impacts stated in Section 18.4. Driver stress would therefore increase from present levels to 2032 Do-Minimum levels and generally either remain the same or increase in the Do-Something as in the Do-Minimum scenario (i.e. with or without the proposed scheme). In each case, increased driver stress is related to increased traffic volumes.

18.7 Ongoing Design Development

Alternative Construction Compound

18.7.1 An addition to the scheme proposals is the inclusion of an alternative location for the construction compound to the west of South Queensferry. This alternative was identified in response to concerns raised by local residents during the ongoing consultation process, and it locates the compound further to the west.

18.7.2 This alternative site would not alter the assessment provided in this chapter, as impacts on vehicle travellers during construction are considered separately in Chapter 19 (Disruption Due to Construction).

Ferry Hills Rock Cuts

18.7.3 The proposed scheme design as assessed in this chapter includes significant rock cuts to the north and south of Ferrytoll Junction. Detailed design may allow these rock cuts to be avoided or reduced. Design development indicates that there could be potential for a westward shift of the proposed scheme alignment of up to approximately 15m between approximate chainage ch7500-7800 (southwest of Jamestown) and ch8150-8500 (west of Hope Street Cemetery) to allow the rock cuts to be avoided.

18.7.4 Environmental review of this refinement indicates that this could reduce adverse impacts associated with the rock cuts without materially increasing other environmental effects. If this option were taken forward it would not alter predicted views along the road corridor with views east generally constrained by rock cuttings, and would not alter driver stress. There would therefore be no change to the significance of impacts reported in this chapter.

18.8 References

Highways Agency et al. (1993). Design Manual for Roads and Bridges (DMRB), Vol.11, Section 3, Part 9, Vehicle Travellers. The Highways Agency, Scottish Executive Development Department, The National Assembly for Wales and The Department of Regional Development Northern Ireland.