



TRANSPORT  
SCOTLAND

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# A77 Symington and Bogend Toll Environmental Impact Assessment

## Environmental Statement Non-Technical Summary



January 2007



## INTRODUCTION

An Environmental Statement (ES) has been prepared on behalf of Transport Scotland for the A77 Symington and Bogend Toll junction improvement Scheme. The main elements of the Scheme are shown in Figures 1.1 and 1.2.

This Non-Technical Summary forms part of the A77 Symington and Bogend Toll Environmental Statement, January 2007 and provides supporting information for the publication of draft Statutory Orders. The Non-Technical Summary describes the Scheme, and summarises in non-technical language, the Environmental Statement that has been prepared in accordance with the Environmental Impact Assessment (Scotland) Regulations 1999.

The A77 dual carriageway at Symington and Bogend Toll is located in South Ayrshire between Kilmarnock and Prestwick. It forms part of the Glasgow - Stranraer Trunk Road (M77/A77), which is the main road link from Glasgow and the Central Belt to Ayrshire and on to ports serving Northern Ireland. The Trunk Road also serves to access Glasgow International Airport from the southwest and Glasgow Prestwick International Airport from the north. In addition to its essential strategic role, the A77 within the study area serves as part of the local road network, providing access to the local centres of Ayr, Prestwick, Troon and Kilmarnock for employment, shopping and recreational activities.

The A77 within the study area is characterised by the presence of direct access to the carriageway. There are six major/minor priority junctions with associated openings in the central reserves, principally at B730 Bogend Toll and at Symington village, which is served by two junctions. Overall there are 13 crossing points in the central reserve and some 19 private accesses to farms, dwellings and businesses, as well as numerous field accesses.

There has been much concern expressed in recent years over the safety of the junctions accessing the dual carriageway, in particular the number and severity of accidents within the study area.

## NEED FOR THE SCHEME

The main objective of the Scheme is to reduce the number and severity of accidents within the study area. It is apparent from the accident statistics that a substantial reduction could be achieved by closing the central reserve openings, providing grade separated junctions at selected locations and closing many of the remaining junctions and accesses on to the A77 to remove opportunities for conflicting vehicle movements.



## BACKGROUND

To date, the Scheme has been through an initial Scottish Transport Appraisal Guidance (STAG) Part 1 Appraisal process to examine outline improvement strategies, a Design Manual for Roads and Bridges (DMRB) Stage 2 Scheme Options Assessment and subsequent Value Review and Scheme Review to identify a Preferred Scheme.

The Scheme has been developed in accordance with Transport Scotland's appraisal criteria for the assessment of trunk road schemes, namely to take account of integration, economy, safety, environmental impact and accessibility.

### STAG Part 1 Appraisal

South Ayrshire Council and their predecessors, Clyde Local Authority Consortium and Strathclyde Regional Council, had previously undertaken a significant amount of assessment work on this section of the A77. These studies and other concepts were examined against the Scheme Objectives in order to recommend those worthy to be taken forward to the Stage 2 Assessment.

The Appraisal found that two strategies – Discrete Grade Separation and Linked Grade Separation – could achieve the Scheme objectives and it was recommended that these be taken forward for more detailed investigation and assessment.

### DMRB Stage 2 Scheme Assessment

Two Scheme Options were developed for the Discrete Grade Separation and the Linked Grade Separation strategies, to a sufficient level of design for assessment purposes to allow comparison to be made between the two strategies, so a preferred Scheme could be identified.

The Options and the methodology and findings of the Stage 2 Assessment are described in full in the Scheme Options Assessment Report, May 2006.

The Stage 2 Assessment concluded that Option 1 – Discrete Grade Separation was preferred overall in terms of engineering, operational, traffic, economic and environmental issues, providing the best value for money while addressing all the Scheme Objectives.

## PROPOSED SCHEME

The Scheme essentially comprises the closure of all central reserve openings, the conversion of existing at-grade junctions at Symington South and Bogend Toll into grade separated junctions by the provision of overbridges and rationalisation of nearby at-grade junctions and accesses by the provision of new side roads or accesses. The existing A77 dual carriageway will be retained in its existing cross section and alignment.



#### *Dutch House Roundabout to Underwood Junction*

Central reserve openings will be closed opposite accesses on the southbound carriageway to Brocket Farm and Rosemount and at the C138 Road to Underwood and opposite two field accesses on the northbound. These access points, plus the access at Hillhouse Farm, will be retained to act as 'left in/left out'. Access to and from the opposite carriageway will be via the adjacent Dutch House Roundabout and Symington Junction as appropriate.

#### *Hansel Village*

The existing accesses at Hansel Village (north and south entrances) and to the adjacent Langlands property will be retained on the southbound carriageway to act as 'left in/left out', as will the access to Low Wexford Farm on the northbound carriageway. The central reserve opening for the south entrance to Hansel village will be closed. Again access to and from the opposite carriageway will be via the adjacent Dutch House Roundabout and Symington Junction as appropriate.

#### *Symington and Helentongate*

The two existing junctions at Symington are both to be closed and be replaced by the provision of a single compact grade separated junction near Symington Road South. A new side road will be provided between the three properties at Trynlaw and Symington Road North to allow the closure of the existing direct access on the northbound carriageway. New private accesses will also be provided from the Symington Junction to Jeanfield Farm and to Helentongate Farm Compound.

The central reserve openings will be closed at both existing Symington junctions, the Helentongate junction and opposite the access to the Helentongate Farm Compound. The Helentongate junction on the southbound carriageway and the Danepark access on the northbound will be retained as 'left in/left out' on this section.

There will be a bus turning facility provided off Symington Road North in Symington village, to allow bus services to enter and leave the village via the new junction.

#### *Whitelees and Bogend Toll Junction*

The existing crossroads between the A77 and the B730 will be upgraded to a compact grade separated junction by the addition of a connector loop and overbridge to link the B730 to the east and west of the A77. The existing B730 connections to the A77 will be retained to operate as 'left in/left out' on both the northbound and southbound carriageways. Roundabouts will be provided on the B730 east and west to form junctions with the connector road. A new side road will connect the Whitelees residential area to the Bogend Toll junction, allowing the closure of the existing Whitelees junction and the direct accesses to Balbir's Restaurant and the properties of 38 and 40 Kilmarnock Road.

The existing access to Muirend House will be retained as 'left in/left out' on the northbound carriageway, as will the existing access to Coodham East Lodge.



## ENVIRONMENTAL ASSESSMENT

### Air Quality

The upgrading of the junctions at Symington and Bogend Toll, plus the construction of a number of new access roads will result in the potential for dust impacts at nearby properties during construction. Moderate effects are predicted at 33 properties during construction. These effects would be temporary in nature but could result in a perceptible increase in the rate at which surfaces become soiled during the works. Impacts of this type are not associated with adverse effects on human health.

The Scheme will also affect air pollution at around 281 properties located within 200m of the A77, Symington Road, Symington Road North, Brewlands Road and the B730 north west of Bogend Toll. Very small changes in traffic flows on the A77 itself are predicted due to the Scheme. Increases of more than 10% in traffic flows are predicted on Symington Road, Brewlands Road and the B730 north west of Bogend Toll. A decrease of more than 10% in traffic flows is predicted on Symington Road North and at Bogend Toll.

Due to the low levels of background pollution, the relatively low traffic flows on the A77 and the very low flows on adjacent side roads, existing air quality is very good. The Scheme is predicted to result in a negligible reduction in air pollution levels at 25 properties, a negligible increase in air pollution levels at 112 properties, and no change in pollution levels at a further 144 properties.

### Cultural Heritage

The assessment considers the effects of the Scheme on archaeology and cultural heritage. Forty-one sites were identified comprising three Scheduled Ancient Monuments, twenty-six listed buildings and twelve unscheduled sites and areas of archaeological interest. None of these will receive a significant irreversible adverse effect from the Scheme. The potential for the survival of unknown buried archaeological remains along the route of the Scheme is considered to be low - moderate.

Non-significant indirect, visual effects have been predicted in relation to the setting of eight sites. It is not considered that any of the cultural heritage sites with statutory designations will undergo significant, indirect environmental effects.


In overall terms, it is concluded that the proposed development will have no significant irreversible effects upon cultural heritage interests and does not conflict with the aims of national, regional and local planning policy as regards cultural heritage.

### Disruption Due to Construction

The proposed construction works will cover an area centred on the existing A77 dual carriageway in the vicinity of Symington and Bogend Toll. It will include areas of agricultural land and a small number of minor watercourses.

The construction period will include construction of the works, which is estimated to be around 12 months, utility diversions, which could be up to three months prior to the construction of the works, and a five-year contract maintenance period.

The improvement of the A77 will result in a number of impacts as a result of construction activity.



The impacts will relate to the provision and operation of construction compounds during the construction period. There will also be disruption to traffic on the A77 due to the traffic management measures necessary to ensure the safety of the construction works and vehicular travellers. The construction of embankments will lead to some noise intrusion, the risk of dust in the air and mud on the road. There is also a potential for construction operations to cause damage to localised soils and water, if appropriate mitigation measures are not adhered to.

However, mitigation measures can be put in place to limit the impacts and it is considered that, with careful management, the significance of impacts can be reduced to moderate adverse. To achieve effective mitigation, discussions with the Planning Authority and Transport Scotland will be essential in order to ensure acceptable levels controls are agreed and implemented. These will be reinforced by requirements in the contract for construction of the works.

### **Ecology and Nature Conservation**

No impacts are anticipated on non-statutory designated sites. Pollution control measures and Sustainable Urban Drainage Systems will have to be implemented to safeguard the water quality of the Pow Burn and Dow's Burn, notably from pollution incidents during both the construction and operational phase of the scheme. With mitigation measures applied, the impact should not be significant.

There are limited areas of direct habitat loss, which will only affect semi-natural habitats of low ecological value, and impacts are deemed to be not significant. Compensatory planting of native species of local provenance should substantially mitigate against this loss. Significant impacts are not anticipated for otters, badgers, water voles or breeding birds, or any other

features of ecological interest, subject to the implementation of specific mitigation measures such as pre-construction checks and methods to avoid disturbance during construction and operation.

### **Landscape and Visual Effects**

The landscape within the study area is a wide plain dominated by arable cultivation and a mature hedgerow matrix, transected by the A77 road corridor.

There are no areas designated for their landscape value within the boundaries of the Scheme, although the attractiveness of the landscape character is recognised and protected within regional structure local development plans. The region is considered to be overall of good landscape value. The landscape pattern has previously experienced change by development of the roads, associated buildings and a footbridge spanning the A77; consequently, with mitigation, the addition of the Scheme could be successfully absorbed into the surrounding landscape.

The Scheme will be most visible from the A77 road corridor and can be observed from some of the minor roads surrounding the site. It is overlooked by some receptors within adjacent settlements and lies close to several stand-alone residential receptors.

There are a small number of visual receptors that will initially experience substantial adverse effects during the construction period, followed by medium-term moderate adverse, degrading to minor adverse once mitigation measures mature. A large number of visual receptors with low sensitivity will experience only minor adverse effects.





### Land Use

The effects of the Scheme on land uses are predominantly related to land take issues, both of a temporary and permanent nature. Where adverse effects are identified, suitable mitigation measures are prescribed.

Temporary land take will be required for a period of about 12 months for the purpose of a construction compound(s). Permanent land-take is required which will affect both agricultural and residential uses. Some of this agricultural land may be of prime quality. Compensation measures will be required for permanent land loss.

### Noise and Vibration

The Scheme would result in noise impacts at nearby properties during construction. South Ayrshire Council guideline construction noise levels would be met at the closest properties to the upgraded junctions. Site boundary noise barriers are recommended to protect the closest properties at Whitelees during the construction of the new access road to these properties, enabling the guideline levels to be met.

The Scheme will also affect traffic noise levels at around 425 properties located within 300m of the A77, the upgraded junctions and access roads and surrounding affected roads.

At the majority of properties the change in traffic noise level due to the Scheme is negligible. A small number of properties located at Bogend Toll and Symington experience a minor decrease in traffic noise levels. Properties along Brewlands Road within Symington and to the northeast of the village undergo a minor-substantial increase in noise levels. This is due to the increase in traffic flows on this road due to the Scheme, however, traffic flows are still very low.

### Pedestrians, Cyclists, Equestrians and Community Effects

The Scheme will have a number of temporary and permanent community effects including changes to access to, and use of, existing outdoor recreational amenity provision and residential and business properties, including village services and farms.


In addition, the Scheme construction and operational requirements will affect journeys made by pedestrians and cyclists as well as private vehicular traffic and public transport (bus) users. Public safety considerations are much improved as a result of the Scheme by closing up the central reserves to prevent vehicles from turning and crossing the carriageways.

A range of measures have been proposed in order to mitigate, where possible, the effects on journeys and the community. The main elements of the Scheme are the construction of road bridges at Bogend Toll and Symington Road South as well as the stopping up of all openings in the central reserves between Bogend Toll and Dutch House Roundabout.

The Scheme would retain accessibility to community facilities and services in Symington, as well as improving the safety of travellers on this stretch of the A77.

### Vehicle Travellers

Views from the road are an important aspect of the Scheme. There will be changes to views as a result of the new junctions and structures, and as a result of landscaping adjacent to the Scheme. The new landscaping will be introduced to repair any loss and to enhance the views from the road.



There are concerns regarding safety on this section of the A77, primarily due to the number of crossing gaps along this stretch, and the most likely stressful activity is driving across oncoming traffic via the gaps in the central reserve.

The Scheme will remove all of these manoeuvres and provide a safe crossing point through the construction of two new bridges. In comparison, it is expected that drivers will find the use of the bridges less stressful and therefore there will be a beneficial impact.

### Water Resources

An assessment has been made of the potential effects on water resources as a result of the Scheme. In the context of these proposals the significant water resources are the surface watercourses (burns and field drains) and the groundwater.

A brief summary of the predicted residual effects from the proposals is provided below.


*Surface Water Quality* – during construction, a number of control measures will be required when working around watercourses to reduce the potential for significant quantities of sediment or other typical construction pollutants being discharged. These measures are considered to be current best practice within the industry and when implemented with good site management, no significant adverse effects are predicted. During operation, road runoff will be collected and conveyed to a number of watercourses. Initial treatment to this runoff will be provided, including the provision of oil/fuel interceptors on all outfalls. Based on the inclusion of these treatment measures, there is not predicted to be any significant adverse effects on the existing water quality of the surrounding watercourses.

*Flooding* – during construction, there will be a requirement for working within and around a number of watercourses, but with careful selection of temporary works it is considered that construction can be completed without any significant effects on upstream water levels. The storm flows for each watercourse can be predicted for the design of each new/extended crossing and therefore each crossing can be designed to minimise any significant effects on upstream water levels.

*Geomorphology and Hydrology* – during the construction of new or extended watercourse crossings there will be some disturbance to the physical features of the banks and channel over the width of each new or extended crossing. With careful planning of the works, a delineated working area and reinstatement with local vegetation, the area affected can be minimised and there are not predicted to be significant effects on the watercourses. The surface water runoff from the proposed road will be discharged to a number of outfalls into watercourses along the length of the Scheme. Attenuation will be provided within the drainage system to ensure that the rate of discharge is appropriate to the watercourse being discharged into.

*Groundwater* – the effects on the quality of the local groundwater from the construction and operational phases of the proposed road are predicted to be minimal, based on the use of best practice pollution prevention measures. The proposed road is not predicted to have any significant effects on local groundwater movement.





With the implementation of the primary mitigation measures detailed in the Environmental Statement, it is predicted that there will be no significant impacts on the water resources.

### **Geology and Soils**

The current A77 is generally straight, climbing gently northward from Dutch House roundabout to a plateau at Symington before descending towards Spittalhill. The surrounding land is generally agricultural with occasional properties. Geologically, the site is predominantly underlain by Boulder Clay over bedrock of Productive Coal Measures, Barren Red Coal Measures and Basalts. Bedrock lies at between 2m and 10m below ground level.

Topsoil loss should be minimised by careful removal and storage during construction. Impacts on groundwater and watercourses shall also be minimised by appropriate mitigation measures during construction.

The potential for shallow mine workings at the Symington bridge was highlighted by the Mineral Valuer. If shallow mine workings are encountered during the ground investigation, grouting may be required to ensure the stability of the area. Grouting of mine workings would likely have minor impacts on the bedrock and hydrogeology of the area.

Overall there is likely to be only minor to negligible adverse impacts on the geomorphology, agricultural soils, drift geology, bedrock, hydrology and hydrogeology. Appropriate mitigation will be required, primarily during construction, to ensure that potential impacts are minimised wherever possible.

### **Policies and Plans**

The junction improvements on the A77 between Bogend and Dutch House Roundabout will largely have positive effects in terms of national, regional and local planning policies. General principles of road safety and access are promoted, as are the protection of the local environment and reduction of noise, air and light pollution. The development of the Scheme will not jeopardise any committed development opportunities. However, there are likely to be affects relating to local landscape character and biodiversity issues, though these will be alleviated through appropriate mitigation measures.



A77 Symington and Bogend Toll

Jan 07

**FIGURE 1.1**  
Symington Junction

**LEGEND**

	New Trees		Existing Road		New Bridge
	Existing Trees		New Roads		Existing Footway
	Proposed hedge		Existing Safety Fence along Route		Proposed Footway
	Existing Water body		New wildflower grass mix		Existing Shared use Footway/Cycleway
			New embankment planting (shrubs and groundcover)		Proposed Shared use Footway/Cycleway

**NOTES:**

1. New trees, shrubs and groundcover to be native species of local Provenance.



A77 Symington and Bogend Toll

Jan 07

**FIGURE 1.2**

Bogend Toll Junction

**LEGEND**

	New Trees		Existing grass central reservation		New Bridge
	Existing Trees		New grass		Existing Footway
	Proposed hedge		New wildflower grass mix		Proposed Footway
	Existing Water body		New embankment planting (shrubs and groundcover)		Existing Shared use Footway/Cycleway
			Existing Safety Fence along Route		Proposed Shared use Footway/Cycleway
			Existing Road		New Roads

**NOTES:**

1. New trees, shrubs and groundcover to be native species of local Provenance.



## WHAT HAPPENS NEXT

Depending on the nature and number of objections received, a Public Local Inquiry into the draft Statutory Orders may be held, together with the hearing of any opinions that may be expressed by members of the public on the Environmental Statement. If a Public Local Inquiry is held, then everyone who has supported, objected to, or made other representations about the draft Statutory Orders and the Environmental Statement will be informed as to the date and venue. Notices confirming the date and venue will appear in the local press at least six weeks prior to any Inquiry commencing.

## FURTHER INFORMATION

Copies of the draft Statutory Orders and the Environmental Statement will be available for inspection, during normal business hours, free of charge at the following locations:

**Transport Scotland**  
Buchanan House  
58 Port Dundas Street  
GLASGOW  
G4 0HF

**South Ayrshire Council**  
County Buildings  
Wellington Square  
AYR  
KA7 1DR

**Symington Library**  
Brewlands Road  
Symington  
KA1 5QZ

Copies of the Environmental Statement including the Non-Technical Summary can also be purchased from Transport Scotland, Buchanan House, 58 Port Dundas Road, Glasgow, G4 0HF, in paper or electronic format (CD-Rom) at a cost of £150 (paper) and £15 (CD).

## YOUR VIEWS

If you wish to support, comment on or object to the draft Statutory Orders or comment on the Environmental Statement, you should write, no later than 13 March 2007 to Transport Scotland at the address below:

**The Chief Road Engineer**  
**Transport Scotland**  
**Buchanan House**  
**58 Port Dundas Road**  
**GLASGOW**  
**G4 0HF**