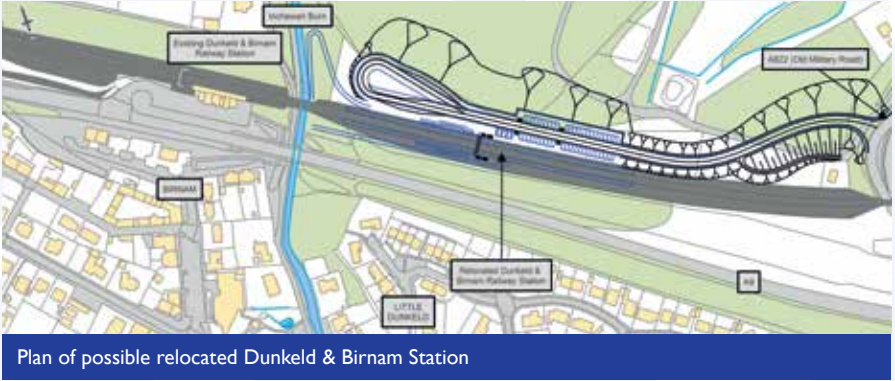


Possible station relocation

Options A and C are at-grade in the vicinity of Dunkeld & Birnam Station. Due to the constrained nature of the site and the standard of dual carriageway proposed, suitable access cannot be provided to the station in its current position.

For options A and C we propose to relocate the station to the west of the railway on land to the north of Birnam Glen Road and Inchewan Burn.

- Key features could include:
- New access road with footways from the A822 (Old Military Road)
 - Replacement car park with approximately 50 vehicle car parking spaces including disabled parking spaces
 - Station access and platform compliant to current legislation



Tay Crossing structure

The road alignment at the Tay Crossing Jubilee Bridge is identical for all alignment options. The road is proposed to be widened on the southbound side of the existing bridge to avoid environmental constraints, including the steep landscape and heavily wooded areas to the west of the carriageway.

To accommodate this alignment, two options for the structure were considered:

- Retain the existing bridge to carry the northbound carriageway and build a new bridge to carry the southbound carriageway
- Or:
- Demolish the existing bridge and construct a new bridge to carry both carriageways.

Options under consideration for either a new parallel structure or a new replacement structure are described below. All temporary construction works would remain outwith the extents of the River Tay.

For options 1 and 2, permanent structures are outwith the extent of the River Tay, avoiding any impact on the Special Area of Conservation (SAC). However, option 3 includes a permanent support within the river, which may have a detrimental impact on the SAC.

- Option 1**
- Three-span bridge with two intermediate supports. The deck is a concrete slab supported by steel box girders of constant depth.
- Option 2**
- Three-span bridge with two intermediate supports. The deck is a concrete slab supported by steel box girders that have a varying depth along the bridge. The intermediate supports are at an angle to reduce the length of the central span.

- Option 3**
- Three-span bridge with two intermediate supports. The deck is a concrete slab supported by steel girders of constant depth. The intermediate supports are within the boundary of the River Tay SAC to match the configuration of the existing bridge.



Graphics of the Tay Crossing options are available to view at: www.transportscotland.gov.uk/project/a9-pass-birnam-tay-crossing

Design development timetable

In addition to refining the options and selecting the preferred route, the next stage of the project will also include more detailed consideration of environmental impacts and mitigation, accesses, lay-bys and facilities for pedestrians, cyclists and other Non-Motorised Users (NMUs).

The timescales for the next stages of the Pass of Birnam to Tay Crossing project are:

Preferred Route Option selection	Summer/Autumn 2016
Development of Preferred Route Option and Environmental Impact Assessment	Autumn 2016 to Autumn 2017
Statutory (planning) process	Autumn 2017 to Winter 2018

What happens next?

We welcome your comments and feedback on the route options. This will help the ongoing development of the Pass of Birnam to Tay Crossing project.

The Design Manual for Roads and Bridges (DMRB) assessment will consider the advantages, disadvantages and constraints associated with the route options, relating to environmental, engineering, economic and traffic issues.

The options presented, together with any other options you identify during or after the exhibitions, will be subject to further development. We will keep you updated through a range of direct communications and consultations including further public exhibitions, local drop-ins and one-to-one discussions.

We invite your comments and feedback using the feedback form available at the exhibition or on the project website: www.transportscotland.gov.uk/project/a9-pass-birnam-tay-crossing

For further information

For further information on the wider A9 Dualling Programme please visit the Transport Scotland website: www.transportscotland.gov.uk/a9dualling

If you have any queries or any comment on the wider programme, please contact the A9 Dualling team by telephone or email.

Telephone: 0141 272 7100
Email: A9dualling@transportscotland.gsi.gov.uk

A9 Dualling
Pass of Birnam to Tay Crossing project



Route and junction options
January 2016



A9 Pass of Birnam to Tay Crossing project

Introduction

In summer 2014, Transport Scotland held a series of public exhibitions along the A9 to inform the development of options for the A9 Dualling Programme.

Jacobs UK Ltd was appointed to take forward the more detailed assessment work required to consider environmental mitigation and to develop route options, junctions and access for the projects within the southern section of the A9 between Pass of Birnam and Glen Garry.

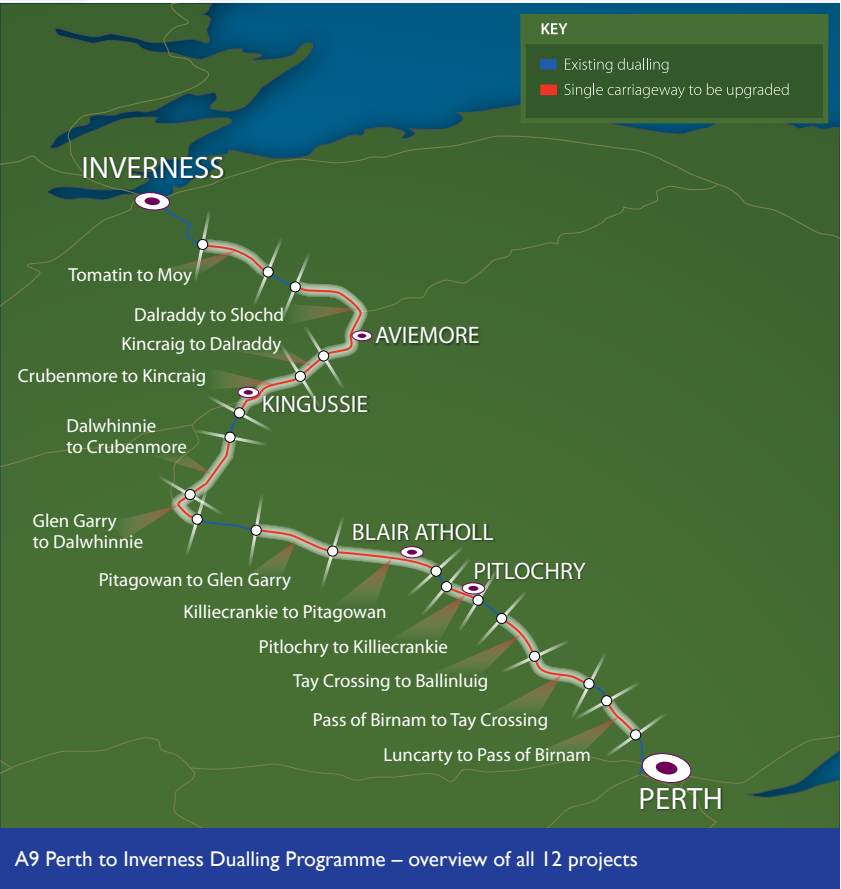
This leaflet provides a summary of the work undertaken on the Pass of Birnam to Tay Crossing project, current design options and an update on the progress made since the previous public exhibitions in the area in 2013.

Assessment of the route options exhibited in 2013 has been ongoing and refinement of those options undertaken. We are seeking public feedback on the current options to help inform the ongoing development and assessment of the dualling proposals. In particular, we would appreciate your views on the following:

- Any local features or constraints that you think may be important for us to know about
- How the different options may affect you
- Any other options that you think we should consider.

It will also assist us in our assessment work if you could complete the feedback form available at the exhibition or on the project website:

www.transportscotland.gov.uk/project/a9-pass-birnam-tay-crossing



Programme objectives

The Scottish Government has committed to dualling the A9 between Perth and Inverness by 2025.

The A9 Dualling Programme objectives are to:

- Improve the operational performance of the A9 by:
 - reducing journey times
 - improving journey time reliability
- Improve safety for both motorised and Non-Motorised Users (NMUs) by:
 - reducing accident severity
 - reducing driver stress
- Facilitate active travel within the corridor
- Improve integration with public transport facilities.

Southern section projects

The southern section of the route contains five projects with dedicated teams working on each:

- Pass of Birnam to Tay Crossing
- Tay Crossing to Ballinluig
- Pitlochry to Killiecrankie
- Killiecrankie to Pitagowan
- Pitagowan to Glen Garry.

This leaflet relates to the Pass of Birnam to Tay Crossing project.

Constraints

The route options have been developed taking into consideration the constraints on the route design identified throughout the A9 corridor as a part of previous and current studies, including:

- Properties
- Dunkeld & Birnam Station including Category A listed building and car park
- River-Tay Special Area of Conservation
- Highland Main Line railway
- River-Tay (Dunkeld) National Scenic Area
- River-Tay Crossing
- Birnam Glen and Inchewan Burn
- Ancient woodland.



Previous route options

In 2009, Transport Scotland commissioned AECOM (formerly URS) to develop route options for the Pass of Birnam to Tay Crossing section of the A9 – considering the engineering, environmental and economic impacts of dualling options through further study, design and assessment work.

The assessment considered an on-line corridor for a dual carriageway, i.e. widening of the existing carriageway. Off-line options, remote from the existing carriageway, had already been discounted, primarily due to the surrounding landscape, topography and resulting environmental impact.

A total of five alternative route options were considered. Each option followed the same linear route, with varying levels and junction layouts.

Exhibitions were held in 2012 and following feedback the options were refined, with updated options exhibited in 2013. Two main options were shown at the time involving an at-grade option widening the existing A9 and a lowered option adjacent to the railway station which provided a structure over the A9 for the station car park and access.

Project development

Since summer 2014 work has been undertaken to review the previous route options, in particular considering ground investigation, constructability and landscape and visual impact assessments.

Ground investigation

To inform the design work and constructability assessments, a detailed ground investigation was undertaken. This involved 300 boreholes and 200 trial pits, including 61 boreholes and 16 trial pits excavated close to Dunkeld & Birnam Station.

Large boulders were recorded in a number of boreholes in the vicinity of the proposed lowered A9 option. The boulders were extremely difficult to break through and would add a significant degree of complexity to construction.

Many of the boreholes include systems to monitor groundwater. The water levels recorded to date suggest the ground water level will generally be below the level of the lowered A9 option.

Constructability

An initial review of the constructability of the at-grade and lowered options was carried out, which highlighted various issues. A key issue is the proximity of the dualling works to the railway line and station building which would result in significantly complex construction techniques and potentially night-time working and/or railway possessions to allow construction which would likely extend the overall construction period.

It also indicated that retaining wall structures would be necessary for both the at-grade and lowered option on both sides of the dual carriageway to prevent encroachment into property and the railway. The walls would be difficult to construct in such a constrained corridor. For the lowered option in particular it was identified that the height of the walls required would mean that work could extend into land below the railway and adjacent properties to ensure the walls would be stable.

Landscape and visual impact

A Virtual Reality Model (VRM) has been developed which shows the previous options illustrating the potential landscape and visual impacts and is available to view at:

www.transportscotland.gov.uk/project/a9-pass-birnam-tay-crossing

The options included an overbridge at the proposed grade-separated Dunkeld junction and retaining wall structures to the north of Dunkeld & Birnam Station.

The lowered option would result in a more urban appearance on the local environment, with the deck of the structure partially obscuring the scenic views from the road.

The at-grade option is at a similar level to the existing carriageway, however visibility from the road would be adversely affected by the proposed Dunkeld junction overbridge.

Current route options

Work has been ongoing to further develop the previous options as a result of the emerging details around landscape, ground conditions, visual impact and constructability issues.

Further consultation has also been undertaken with stakeholders, including Network Rail, given the close proximity of the railway and the potential impacts on it and Dunkeld & Birnam Station.

The design work has focused on:

- Modifications to the design of the main dual carriageway, resulting in three options being developed
- Modifications to the design of junction options at Birnam, Dunkeld and Dalguise
- Station relocation to cater for vehicular access and car parking arrangements, whilst maintaining pedestrian and cyclist access along Birnam Glen Road
- Further development of options for the River-Tay Crossing.

The three options developed and being assessed comprise:

Option A – at-grade option

- Dunkeld & Birnam Station relocated immediately north of Inchewan Burn to resolve previous accessibility issues
- Category A listed station building may remain in its current location, without vehicular access.
- The A9 is raised higher to the north of the station, to reduce the extent of retaining walls next to properties to the east and the railway to the west. This will allow the junction at Dunkeld to be below the mainline, to avoid it being prominent in views from the adjacent area and the A9 corridor
- Raised alignment of the A9 fits better with natural topography
- Increased prominence of the A9 and its influence on neighbouring area.

Grade-separated junctions proposed:

- Birnam junction – grade-separated junction incorporating connection and realignment of the B867 and Perth Road, crossing the A9 on an underbridge structure
- Dunkeld junction – grade-separated junction incorporating connection and realignment of the A923 and A822 (Old Military Road), crossing the A9 on an underbridge structure
- Dalguise junction – grade-separated junction incorporating realignment of the B898, crossing the A9 on an underbridge structure.

Left-in/left-out junction at The Hermitage.

Option B – lowered option

- Relatively unchanged from lowered option presented at the previous exhibitions in 2013 – aside from alterations to grade-separated junctions
- Significant engineering solutions necessary to build close to Dunkeld & Birnam Station, Highland Main Line railway and residential properties. This results in increased construction complexity, cost and a longer programme of construction
- Restrictions placed on contractor to mitigate disruption on the railway, which may involve significantly more work being carried out at night
- Greater noise and vibration issues would be inevitable during construction
- Grade-separated junctions proposed – as in option A
- At Dunkeld junction, the realigned A923 and A822 (Old Military Road) crosses the A9 on an overbridge structure.

Left-in/left-out junction at The Hermitage.

Option C – new option

- Closer to existing carriageway levels to the north of the station than option A to ease traffic management during construction
- The A822 (Old Military Road) and A923 are realigned to connect to the new junction at Dunkeld and need to be lowered considerably. Significant earthworks are required for the A822 (Old Military Road) and A923
- New railway underbridge required for realigned A822 (Old Military Road)/A923
- Dunkeld & Birnam Station relocated immediately north of Inchewan Burn to resolve previous accessibility issues
- Category A listed station building may remain in its current location without vehicular access
- Grade-separated junctions proposed – as in option A.

Left-in/left-out junction at The Hermitage.

More detailed plans and visualisations of the options are available to view at:
www.transportscotland.gov.uk/project/a9-pass-birnam-tay-crossing