Scheme Details

Option Ref. (Stage 5)

Route D, Junction 3 (WR.ST50004)

Option Component Ref (Stage 4)

Mainline On-line	Murthly Castle / Birnam Junction	Dunkeld & Birnam Station	Dunkeld Junction	The Hermitage Junction	Dalguise Junction
MO.ST4.0002	BN.ST4.0001	DS.ST4.0001 DS.ST4.0012	DN.ST4.0002	HT.ST4.0005	DG.ST4.0002

Option Description

Whole Route Option D commences at the northern extent of the existing section of dual carriageway at the Pass of Birnam, south of Birnam and Dunkeld. The option is on-line, largely following the alignment of the existing single carriageway, and extends approximately 8.3 kilometres to tie-in to the next A9 dualling scheme, Tay Crossing to Ballinluig, approximately 0.5 kilometres north of the River Tay crossing.

At the southern extent, the alignment is on a right-hand curve and is largely at existing ground level before straightening on approach to the existing junction with the B867 and Perth Road at Birnam. A new underbridge is included in the locality of the existing access to Murthly Estate, which links to the A867 to the west. Option D incorporates an at-grade roundabout in the locality of the existing junction that provides connections to the A9 (north and south), B867 and Perth Road.

North of the junction, Option D is on a left-hand curve with the Highland Main Line railway immediately to the west and residential properties to the east and is largely at-grade. Option D incorporates a 150 metre long underpass in the vicinity of Dunkeld and Birnam Station. As a result, on approach to the station, the A9 begins to change vertically and is lower than existing ground. As the A9 is lowered in the vicinity of the station, Station Road is extended across the structure providing direct access to the station. A replacement car park will be provided on the structure. As the A9 is lowered in the vicinity of the station, access to Birnam Glen will be stopped-up at this location. Alternative access to Birnam Glen will be provided via a new access road from the A822 to the west of the Highland Main Line railway. The Inchewan Burn will be lowered to accommodate the new A9 dual carriageway.

North of the station, Option D is generally on a straight approaching Dunkeld Junction, which is an at-grade elongated roundabout (or and eggabout, as described by young people in consultation with the Children's Parliament) in the locality of the existing junction with the A923 and A822 at Little Dunkeld. The roundabout provides connections to the A9 (north and south), A923, A822 and road to Inver with a segregated left lane between the A923 and A9 south to improve the overall capacity of the roundabout and reduce queueing traffic on the A923.

To the north of the roundabout, the A9 is largely at existing ground level and is on a left-hand curve as it crosses the River Braan and approaches Inver. Option D transitions to a straight and passes Inver, which is to the west. A left-in left-out junction is proposed on the northbound carriageway immediately north of Inver to provide access to The Hermitage. The proposed junctions at Dunkeld and Dalguise will be used as turning points for traffic using the left-in left-out junction at The Hermitage.

The alignment crosses the Highland Main Line in the locality of the existing rail crossing at Inver and continues on a right-hand curve before crossing the railway at the existing Inch crossing and transitioning to a straight to cross the River Tay. This section of A9 dualling terminates approximately 0.5 kilometres north of the River Tay crossing.

To the south of the proposed River Tay crossing, and the existing priority junction with the B898 at Dalguise, Option A incorporates a grade separated junction. This junction incorporates loops in the northbound direction and slip roads in the southbound direction, facilitating all vehicle movements. The realigned B898 crosses under the A9 via an underbridge, connecting to a roundabout on the east side of the A9, which also connects to the southbound exit and entry slip roads.

Option D incorporates a 70 miles per hour speed limit.

Transport Scotland Objectives

Improve Operational Performance	Improves journey time reliability, compared to the existing condition, by provision of a high standard dual carriageway with no gaps in the central reserve that allows safe overtaking. Two at-grade roundabouts, at Birnam and Dunkeld, results in most future A9 journeys increasing by at least 15 seconds, compared to the existing condition. Future traffic flows on Perth Road likely to be similar to existing, although this will increase in future years due to natural traffic growth. Traffic on Station Road expected to increase by approximately 100 vehicles per day due to new access to the station. Two-way Annual Average Daily Traffic (AADT) flows on the A9 dual carriageway expected to be within the approximate range of 25,000 to 26,800 in 2041.
Improve Safety	No gaps in the central reserve, eliminating right-turn manoeuvres across oncoming traffic. Layout of A9 (Dual 2-lane All Purpose (D2AP) carriageway), The Hermitage and Dalguise Junction recommended for use on Category 7A dual carriageways (also suitable for Category 5 and 6 dual carriageways) and consistent with the overall A9 Dualling Programme. At-grade roundabouts at Birnam and Dunkeld not consistent with overall A9 Dualling Programme and not recommended for use on Category 7A dual carriageways (suitable for Category 5 and 6 dual carriageways) and will require a Departure from Standards. Junctions improve access to the A9 for local traffic by removing right-turn manoeuvres across oncoming traffic and generally allows compliant gradients and geometry on side roads. Some Relaxations and Departures from Standards necessary to avoid severe environmental impact on people, property and landscapes. Appropriate mitigation to reduce or eliminate potential hazards will be considered at future stages of design. At-grade roundabouts at Birnam and Dunkeld Junctions may introduce potential for low severity accidents.
Facilitate Active Travel	Potential temporary diversions to sections of National Cycle Network (NCN) Route 77 and Core Paths (DUNK/10, DUNK/11, DUNK/15, DUNK/23, DUNK/57, DUNK/59, DUNK/64, DUNK/100, DUNK/137, DUNK/142, DUNK/144 and DUNK/145) during construction. Permanent diversion to NCN Route 77 and Core Paths (DUNK/57 and DUNK/142) in the locality of the existing Birnam Junction. Likely these routes will be diverted along Perth Road, however roundabout does not provide a grade separated crossing facility of the A9. Likely an overbridge or underbridge structure would be required to provide a safe Non-Motorised User (NMU) crossing point. Permanent diversion to Core Path (DUNK/11) as Birnam Glen is stopped-up. Diversion likely to be via Station Road and the steps at the station to reconnect with the Core Path west of the station. Permanent diversion to Core Path (DUNK/23), which crosses the River Braan on a footbridge. A new crossing will be required in the locality of the existing.
Improve Integration with Public Transport	A9 dual carriageway is expected to deliver economic growth and improved links to Public Transport facilities. Although increase journey times anticipated (by at least 15 seconds), dualling will improve journey time reliability, compared to the existing condition, by provision of a high standard dual carriageway with no gaps in the central reserve that allows safe overtaking. Proposed junctions at Birnam, Dunkeld and Dalguise provide full access to and from the A9, therefore no adverse impacts on Public Transport anticipated, however at-grade roundabouts at Birnam and Dunkeld may introduce delays to strategic bus services, particularly at peak times, compared to grade separated junctions. Impact on existing bus stops at Inver, replacement provision will be considered at more detailed stages of design, in consultation with relevant stakeholders. No direct access to Dunkeld & Birnam Station from the A9. Layout provides connection to the station from Perth Road through Birnam and Little Dunkeld. Replacement car parking provision on top of underpass at the station could potentially incorporate a bus stop and bus turning area to improve integration with Public Transport facilities.

Construction Issues

Constructability	At this stage in the design process an initial review of constructability has been undertaken to ensure Option D can be constructed and to identify possible issues. Exact construction methods will be identified by the successful Contractor, allowing them to use their experience to identify innovative methods that may lessen complexity and reduce associated impacts, costs and construction time. Based on the ground investigation information available, soil conditions are expected to be predominantly dense to very dense materials, including potential for large boulders. In places, these deposits will be water bearing. Bedrock could possibly be encountered in formation of the bored piled walls. The new access road to properties on Birnam Glen to the east of the station is in close proximity to Ladywell Landfill site. The ground conditions, nature and extent of the waste deposited in the landfill area are not known at this stage. There is potential for contaminated ground to be encountered in this area, which may require non-standard earthworks treatment. This may involve excavation and replacement of material or implementation of an engineered cap. The final form of remediation in this area will depend on the detailed proposals. Underpass likely formed using retaining walls in the verges and central reserve of the A9 dual carriageway over the 150 metre length. Likely, due to space constraints and ground conditions that retaining walls potentially will be constructed using large diameter bored piles to retain a height of approximately 10 metres, which will lengthen time for construction. Installation will require heavy plant in close proximity to residential properties, Dunkeld & Birnam Station, the Highland Main Line railway and the Category A Listed station building. Large boulders are

	present in the ground; therefore, vibration may be significant during piling operations, introducing a structural risk to adjacent residential properties and stakeholder assets. Retaining walls will be required on the northern and southern approaches to the underpass. The walls will be larger to the north as the scheme is adjacent to the Highland Main Line railway on the west and residential properties to the east. Embedded retaining walls could be constructed, however due to the height of the walls alongside the Highland Main Line railway, which are up to approximately 9 metres, permanent ground anchors may be required. The length of anchor required will likely extend beyond the highway boundary within Network Rail land. As the ground anchors will be within the railway track support zone, Network Rail is unlikely to allow implementation of such a system. To eliminate the need for ground anchors, a more complex retaining wall solution would be required, incurring greater costs and increasing construction duration. It should be noted that the proposed height of retaining walls could be reduced alongside the railway if the existing bund was removed. Further discussions will be undertaken with Network Rail in the future. Tunnel walls would be designed to resist groundwater entry and the proposed bored piled solution would need to extend considerable depth below the base of the completed cut and cover tunnel. The bored piled walls may impact groundwater flow, which flows towards the River Tay. Maintaining access to the station during construction will be difficult given the level difference and the working area required to install the bored piled retaining walls. Temporary measures will be considered; however, it is likely that no car parking provision will be available during construction and there is a possibility that the station may need to close for a large duration of the works, subject to discussions with Network Rail and the community. Works to construct the A9 and underpass will be immediately adjacent to the Highland Main Line railway. It is likely the works can be completed with the railway operational, subject to suitable mitigation and monitoring being implemented. The Category A Listed station building is approximately 5 metres from the works, therefore there is a possibility of accidental damage due to vibration and the close proximity of heavy plant. To minimise the risk of damage, strengthening works to the building could be considered and careful monitoring would seek to ensure the structural integrity of the building is not adversely affected. Impacts on residential properties to the east would also need to be considered. Generally, excavations and earthworks for the proposed junctions, which are largely off-line, can be undertaken with minimal disruption to the existing road network. Inchewan Burn requires to be lowered by approximately 5 metres to accommodate the dual carriageway. It may be possible to dam the burn upstream of the proposed works and pump water into the burn downstream of the works. This method is vulnerable to extreme weather events and is dependent on effective operation of pumping equipment. Equipment will therefore need to be continually monitored during the works to avoid possible flooding issues. Works would need to be undertaken in consultation with relevant environmental organisations as the burn is a tributary of the internationally important River Tay Special Area of Conservation (SAC). Bridge structures will likely be built in two stages as the individual carriageways are constructed. One half of the structure will be constructed along with the section of dual carriageway. Traffic is then moved to the newly constructed carriageway while the second half of the structure is constructed. Structures are then connected to form a single structure. Risks associated with working in close proximity to the River Tay, which in addition to the River Braan, is within the River Tay SAC, and also the Inchewan Burn, include siltation and polluted run-off and spillages entering the watercourse during construction, potentially causing harmful effects to SAC qualifying species, such as otter and fish. There are numerous existing overhead and underground public utilities in the locality of the A9, including that belonging to Scottish Water, Scottish Gas Networks (SGN), British Telecom (BT) and Scottish & Southern Energy (SSE). A number of these utilities will need to be diverted as a result of the works, particularly those in the locality of the underpass. Where possible, utilities will be diverted in advance of the main works. Given the scale of likely diversions, this work could take approximately 2 years. New access to Birnam Glen from the A822 and lowering of the Inchewan Burn would be completed as advanced works. It is likely that the underpass will be constructed as two separate structures, northbound and southbound, with the southbound section constructed first. The proposed roundabouts at Birnam and Dunkeld could potentially be constructed off-line, with relatively standard Traffic Management. The works will be undertaken under continuous Traffic Management, with reduced speed limits and narrow lane widths, which may increase the risk of accidents between opposing traffic flows. At this stage, despite the relative space constraints, it is anticipated that 2-way traffic can be maintained on the A9 during construction, however some short closures may be necessary to complete structural works.
Construction Cost	£300 - £500 million (approximate) Cost estimates have been undertaken on the level of design undertaken at Stage 5 of the co-creative process. The costs include pre-construction costs (design and preparation costs, advanced works costs and land costs) and construction costs (preliminaries and indirect costs and direct construction costs, including structures, road pavement, earthworks, risks and opportunities and inflation). It should be noted that these cost estimates are for comparison purposes only and will be further refined once more detailed design work is undertaken.
Community Objectives	
Health, Noise and Well-being	Potential dust nuisance during construction for residential properties in the immediate locality of A9 works. Measures may be implemented by the Contractor to reduce dust emissions, including appropriate storage and covering of stockpiled materials, use of sprinklers and hoses to prevent dust production and concrete mixing in enclosed areas. Likely no exceedance of UK air quality standards and objectives (nitrogen oxides (NO_2) and particulate matter (PM_{10} and $PM_{2.5}$)) as a result of road traffic emissions. No further impact on residents of Perth Road anticipated in terms of air quality as traffic is likely to be similar to existing. Traffic noise levels, compared to existing noise levels, are as follows: • Within extents of underpass – expected to decrease, between 3 and 10 decibels. • At Dunkeld and Inver (outwith underpass) – similar to existing, any increase less than 3 decibels. • At Perth Road – similar to existing, any increase less than 3 decibels. (Note: It is assumed that low noise surfacing will be provided on the A9, however no other mitigation, such as noise fences or noise bunds, is included, this will be considered in the future.) Potential for localized increased noise levels at underpass extents due to traffic noise deflections from within the underpass, however this may be reduced by the use of noise absorptive surfaces within the underpass. Construction will generate noise and vibration, with the potential to affect residential properties in the locality of the works. Expected to be significant for those properties immediately adjacent to the underpass as bored piled walls are formed. Noise and vibration limits during construction will be specified within a Construction Environmental Management Plan (CEMP). The approach will be agreed between the Contractor and the Environmental Health Officer of Perth & Kinross Council. The Contractor will also require to develop and implement a Noise and Vibration Management Plan to meet the requirements set-out in the CEMP.
Landscape and Environment	Proposed dual carriageway is generally on-line, therefore land-take is limited to areas immediately adjacent to the existing A9. Some additional land-take is required for the grade separated junction at Dalguise, and to a lesser extent for the roundabouts at Birnam and Dunkeld and the access to Birnam Glen properties. The total land-take for Option D is approximately 48 hectares. Demolition of a residential property at Auchlou and electrical sub-station on Station Road will be required. Potential impact on residential property with associated industrial building at the existing junction between the A9 and A822 and commercial property within existing Birnam Industrial Estate (former veterinary surgery). Potential disturbance of land associated with current and previous land uses that may release pollutants if unmitigated, including the existing A9, Highland Main Line railway, Ladywell Landfill site and former curling pond and gravel pit (potentially infilled with unknown material). Expected to be mitigated by implementing appropriate waste management procedures identified in a CEMP. Further investigation required to identify mitigation for works in the locality of Ladywell Landfill site. Associated A9 earthworks within the River Tay 1 in 200-year floodplain at Inver and the River Tay crossing will increase flood risk upstream. Requirement for compensatory floodplain elsewhere to replace that lost. Some road drainage complexities due to the depth of the road north of Inchewan Burn, and a pumping station may be necessary for effective discharge. Bridge structures over the River Braan and River Tay required at similar level to existing A9 bridges. Further crossings of seven minor watercourses required. Structures over watercourses likely to lead to changes to the physical characteristics (including the banks and beds), however some modification already exists in these areas. Inchewan Burn would require to be lowered by approximately 5 metres, crossing the A9 dual carriageway in a culvert. This involves major engineering works, extensively modifying the physical characteristics of the watercourse in an area that has previously been subject to river restoration, which, depending on constraints, may extent for a significant length. The modifications to the burn will likely prevent passage of migratory fish species and may result in increased deposition of river bed material, leading to possible blockages and therefore increased

	flood risk. Risk of potential harmful effects on the SAC qualifying species. Flood risk will likely increase during construction. The works would result in significant adverse impacts to Inchewan Burn and it may prove difficult to gain approval from the relevant statutory bodies to implement the works. Loss of less than 1 hectare of aquatic and terrestrial habitat associated with the River Tay SAC. Watercourse structures may introduce shading, further impacting SAC qualifying species, such as otter and fish. Loss of approximately 22 hectares of woodland designated on the Ancient Woodland Inventory, predominantly at the Dalpowie Plantation, Ring Wood and Inver Wood. Provision of compensatory woodland will be considered at future stages of design. Potential for impacts on protected species, including: • Loss of otter habitat within the vicinity of the River Tay SAC, River Braan (within the River Tay SAC) and Inchewan Burn. • Disruption to fish migration and habitat in Inchewan Burn. • Loss of high reptile habitat in discrete areas throughout the A9. • Loss of bat roost potential in trees, buildings and structures. • Potential loss of red squirrel shelters/habitat in woodland areas. • Potential loss of breeding bird habitat in woodland and scrub areas. • Potential construction related impacts, such as noise, vibration, dust, aquatic pollution and fragmentation of habitat. Ecological surveys will be undertaken prior to construction for important habitats and protected species to inform assessments and potential mitigation requirements, which might include: • Appointment of an Ecological Clerk of Works to supervise the works. • Replacement / compensatory habitat to replace that lost. • Creation of crossings suitable for certain species. • Seasonal constraints on the works. • Controls to avoid or reduce potential effects on species as a result of vibration, noise and light during construction. Loss of existing, mature roadside woodland and alterations to landform as a result of the road itself, associated earthworks and new bridges. Underbridge at Murthly would contribute to the loss of woodland within Murthly Castle and Designed Landscape and there would be adverse impacts on the River Tay (Dunkeld) National Scenic Area (which the existing A9 currently passes through) and the landscape character. Impacts on visual amenity, both during construction and operation, including: • Significant impacts on residents within Little Dunkeld, Inver, Inchmagrannachan. • Significant impacts on people using the A822, A923, B867, the Highland Main Line railway, NCN 77, Core Paths. the Tay Forest Park and Murthly Castle and Designed Landscape. • Lesser impacts on residents of Birnam and Inchfield. • Lesser impacts on visitors to the Hermitage, Inver Mill Caravan Park, Dunkeld Cathedral and Birnam Highland Games Park. The introduction of street lighting on roundabouts and associated approach roads in an area that is currently not lit would have localised adverse impacts on landscape and visual amenity. Effects on landscape and visual receptors could be reduced by mitigation, including retaining existing woodland as far as practicable and new planting similar to the existing species. Excavations and retaining walls required to avoid impact on Dunkeld & Birnam Station and residential and commercial properties: • Excavations – up to approximately 29 metres deep on approach to Dalguise Junction. • Embankments – up to to approximately 19 metres high at Birnam Junction (roundabout). • Retaining Walls – bored pile walls with a retained height of approximately 10 metres in the locality of Dunkeld & Birnam Station.
Safety	No gaps in the central reserve, eliminating right-turn manoeuvres across oncoming traffic. Layout of A9 (Dual 2-lane All Purpose (D2AP) carriageway), The Hermitage and Dalguise Junction recommended for use on Category 7A dual carriageways (also suitable for Category 5 and 6 dual carriageways) and consistent with the overall A9 Dualling Programme. At-grade roundabouts at Birnam and Dunkeld not consistent with overall A9 Dualling Programme and not recommended for use on Category 7A dual carriageways (suitable for Category 5 and 6 dual carriageways) and will require a Departure from Standards. Junctions improve access to the A9 for local traffic by removing right-turn manoeuvres across oncoming traffic and generally allows compliant gradients and geometry on side roads. Some Relaxations and Departures from Standards necessary to avoid severe environmental impact on people, property and landscapes. Appropriate mitigation to reduce or eliminate potential hazards will be considered at future stages of design. At-grade roundabouts at Birnam and Dunkeld Junctions may introduce potential for low severity accidents.
Local Economy	Two at-grade roundabouts, at Birnam and Dunkeld, results in most future A9 journeys increasing by at least 15 seconds, compared to the existing condition. Future traffic flows on Perth Road likely to be similar to existing, although this will increase in future years due to natural traffic growth. Traffic on Station Road expected to increase by approximately 100 vehicles per day due to new access to the station. A9 dual carriageway is expected to deliver economic growth and improved links to Public Transport facilities. Although increase journey times anticipated (by at least 15 seconds), dualling will improve journey time reliability, compared to the existing condition, by provision of a high standard dual carriageway with no gaps in the central reserve that allows safe overtaking. Proposed junctions at Birnam, Dunkeld and Dalguise provide full access to and from the A9, therefore no adverse impacts on Public Transport anticipated, however at-grade roundabouts at Birnam and Dunkeld may introduce delays to strategic bus services, particularly at peak times, compared to grade separated junctions. Impact on existing bus stops at Inver, replacement provision will be considered at more detailed stages of design, in consultation with relevant stakeholders. No direct access to Dunkeld & Birnam Station from the A9. Layout provides connection to the station from Perth Road through Birnam and Little Dunkeld. Replacement car parking provision on top of underpass at the station could potentially incorporate a bus stop and bus turning area to improve integration with Public Transport facilities. Two-way AADT flows on the A9 dual carriageway expected to be within the approximate range of 25,000 to 26,800 in 2041.
Active Travel and Recreation	Potential temporary diversions to sections of NCN Route 77 and Core Paths (DUNK/10, DUNK/11, DUNK/15, DUNK/23, DUNK/57, DUNK/59, DUNK/64, DUNK/100, DUNK/137, DUNK/142, DUNK/144 and DUNK/145) during construction. Permanent diversion to NCN Route 77 and Core Paths (DUNK/57 and DUNK/142) in the locality of the existing Birnam Junction. Likely these routes will be diverted along Perth Road, however roundabout does not provide a grade separated crossing facility of the A9. Likely an overbridge or underbridge structure would be required to provide a safe NMU crossing point. Permanent diversion to Core Path (DUNK/11) as Birnam Glen is stopped-up. Diversion likely to be via Station Road and the steps at the station to reconnect with the Core Path west of the station. Permanent diversion to Core Path (DUNK/23), which crosses the River Braan on a footbridge. A new crossing will be required in the locality of the existing.
Public Transport	A9 dual carriageway is expected to deliver economic growth and improved links to Public Transport facilities. Although increase journey times anticipated (by at least 15 seconds), dualling will improve journey time reliability, compared to the existing condition, by provision of a high standard dual carriageway with no gaps in the central reserve that allows safe overtaking. Proposed junctions at Birnam, Dunkeld and Dalguise provide full access to and from the A9, therefore no adverse impacts on Public Transport anticipated, however at-grade roundabouts at Birnam and Dunkeld may introduce delays to strategic bus services, particularly at peak times, compared to grade separated junctions. Impact on existing bus stops at Inver, replacement provision will be considered at more detailed stages of design, in consultation with relevant stakeholders. No direct access to Dunkeld & Birnam Station from the A9. Layout provides connection to the station from Perth Road through Birnam and Little Dunkeld. Replacement car parking provision on top of underpass at the station could potentially incorporate a bus stop and bus turning area to improve integration with Public Transport facilities.
Historic Environment	Approximately 10 hectares of Murthly Castle Garden and Designed Landscape, less than a hectare of The Hermitage Garden and Designed Landscape and less than a hectare of Birnam Conservation Area affected (existing A9 already passes through these designations), leading to an adverse impact on these designations. The on-line dualling would be constructed in close proximity to the Category A Listed Dunkeld and Birnam Station building.

	Therefore, there is potential for the setting of this designation to be adversely affected temporarily during construction. Once the dualling is operational, there would be a positive impact on the Category A Listed Dunkeld and Birnam Station building as the link to the local community via Station Road would be reinstated.

Future Scheme Development Beyond Co-Creative

The design and assessment undertaken for the co-creative process has been completed to inform the decision making process. However, further design refinement and scheme assessment is required on the preferred route to ensure the design is to the same level of detail as is normal for major Trunk Road projects at the route options stage, and sufficient assessment work is completed to allow the Scottish Ministers to make their decision on the preferred option with confidence that it can be delivered successfully through the planning process.

This will include, but not limited to, the following:

- Additional ground investigation, focused on the lowered section of A9 for the on-line options (A, B and D) and for the offline option C, the ground investigation will need to focus on the locality of the off-line tunnel, at the northern and southern extents.
- Additional ecological and environmental surveys and consideration of environmental mitigation.
- Flood modelling and road drainage design.
- Design refinement and engineering assessment, including compliance with standards and constructability assessment.
- Design of key structures including, tunnels, bridges and retaining walls.
- Development of Non-Motorised User (NMU) routes.
- Additional traffic modelling and analysis.
- Public Utility diversions strategy.
- Consultation with statutory and non-statutory consultees.
- Consultation with affected landowners.
- Consideration of non-spatial options.
- Scheme cost review, including assessment of risks and opportunities.