

	Environmental Issues		Engineering Issues		Economic Issues	
	Issue	Comments	Issue	Comments	Issue	Comments
	<p>Human/Property</p> <p>Demolition 8 No</p> <p>Proximity 12 0-50m 13 50-100m 21 100-200m 12 200-300m</p> <p>Sensitive Sites</p>	<p>Cumulative totals: (12) (25) (46) (58)</p> <p>Netherley School (<500m) Lairhilllock School (<500m)</p>	<p>Length</p> <p>8.7 km</p> <p>Junctions</p> <p>At grade connection with Stonehaven slip roads</p> <p>Horizontal Alignment</p> <p>No sub-standard elements</p> <p>Vertical Alignment</p> <p>No sub-standard elements</p> <p>Local Routes</p> <p>12 Side Road Crossings 5 Diverted/Stopped Up</p> <p>Earthworks</p> <p>Acceptable Cut Bulk Fill Balance</p>	<p>Provides access to A90</p> <p>1,231,942 m³ 1,297,443 m³ - 65,501 m³ (Deficit)</p> <p>Structures</p> <p>3 No of overbridges 5 No of underbridges 7 No of underpasses 6 cost significant factors affecting overbridges 9 cost significant factors affecting underbridges 12 cost significant factors affecting underpasses</p> <p>Cost significant factors for structures:</p> <p>1. Skew (> 30°); 2. AWPR Curvature (Straight,Curved); 3. Earthworks (OB>10m, UB>9m); 4. Slip Roads (Y,N); 5. Side Road Realignment (Y,N). 6. Pipeline Structure (Y,N).</p> <p>Route in fill</p>	<p>Pro-rata Section Cost (compared to lowest cost option) + 2.3%</p> <p>Factors With Potential Significant Cost Influence</p> <p>Structures Property Utilities Other</p>	<p>Note: Cost estimate is based on pro-rata of Murtle Route cost estimate based on length only</p> <p>Note: These factors would increase the above costs</p> <p>See cost factors</p> <p>Proximity to properties may result in increased costs No. of demolitions will result in increased costs</p> <p>Runs close to BP and Shell pipelines for 1.5km and crosses each twice</p> <p>Requires extensive improvement work to upgrade B979 and also requires provision of parallel all-purpose route</p>
	<p>Land Use</p>	<p>Less than 40m east of Netherly Village Severance and loss of some woodland (community land) near Forrester's Croft Mill Inn and Lairhilllock School within 500m</p>				
	<p>Landscape</p>	<p>Medium sensitivity Open Farmland for 4.7km; Wooded farmland for 4.0km. Route comes close to the settlement of Netherley. Route follows a line close to the existing route through the Hill of Megray and has a good landscape fit throughout.</p>				
	<p>Water Quality</p> <p>SAC - High impact SAC - Medium impact Non SAC - High Impact</p>	<p>6 watercourses associated with the SAC with potential for high impact none 3 other watercourses with potential for high impact</p>				
	<p>Ecology</p>	<p>Burn of Monquich, associated with hydrology of Red Moss of Netherly SAC, also tributary of River Dee SAC. Route would result in disturbance and habitat fragmentation, potential to affect hydrology of moss. Potential to affect integrity of SACs.</p> <p>Close to or through 5 areas of ancient woodland. Close to or through 1 area of woodland.</p>				
	<p>Cultural Heritage</p>	<p>Direct - Direct Impact on 9 sites in total. 2 Sites of Regional Importance. One of these is a Category B Listed Building (Ury House Gate Lodge). 3 other sites are of Local Importance, 4 sites are of Unknown Importance Proximity - 10 sites lie with 250m. 1 of Regional Importance, 8 of Local Importance, 1 Unknown importance. Netherley Bridge is a Category C(s) Listed Building</p>	<p>Utilities</p> <p>Significant impacts on: 2 Oil Pipelines 2 Natural Gas Pipelines 1 High Voltage O/H Elec 0 High Pressure Gas 2 Fibreoptics 0 Trunk Water Main</p>			

	Environmental Issues		Engineering Issues		Economic Issues	
	Issue	Comments	Issue	Comments	Issue	Comments
	Human/Property		Length		Pro-rata Section Cost (compared to lowest cost option) + 4.7%	Note: Cost estimate is based on pro-rata of Murtle Route cost estimate based on length only
	Demolition 0 No		8.9 km			
	Proximity 0 0-50m 11 50-100m 14 100-200m 28 200-300m	Cumulative totals: (0) (11) (25) (53)	Junctions		Factors With Potential Significant Cost Influence	Note: These factors would increase the above costs
	Sensitive Sites	Lairhilllock School (<100m)	At grade connection with Stonehaven slip roads	Provides access to A90	Structures	See cost factors
	Land Use	Less than 100m east of Netherly Village Severance and loss of some woodland (community land) near Forrester's Croft Lairhilllock Inn and School within 100m	Horizontal Alignment		Utilities	Runs close to BP and Shell pipelines for 1.5km and crosses each twice
	Landscape	Medium sensitivity. Open Farmland for 4.1km; Wooded farmland for 4.8km. Route will sever the higher open farmlands of the Hill of Megray. The route follows lower ground with a reasonable landscape fit. The hillside cuttings will be prominent in views from the town of Stonehaven.	No sub-standard elements		Earthworks	Passes through peat and would entail excavation and replacement / or piled raft with associated additional cost. Substantial deficit of material
	Water Quality		Vertical Alignment			
	SAC - High impact	7 watercourses associated with SAC with potential for high impact	5% grade on mainline			
	SAC - Medium impact	none	Local Routes			
	Non SAC - High Impact	4 other watercourses with potential for high impact	8 Side Road Crossings 0 Diverted/Stopped Up			
	Ecology	Limpet Ancient Woodland, Limpet Burn. Route will result in habitat loss, fragmentation and disturbance. Burn of Monquich. associated with hydrology of Red Moss of Netherly SAC, also tributary of River Dee SAC. Route would result in disturbance and habitat fragmentation, potential to affect hydrology of moss. Potential to affect integrity of SACs. Red Moss of Netherly SAC. route would result in loss of bog habitat adjacent to western boundary of SAC (similar to that found in SAC). Potential to affect hydrology of SAC. Potential to affect integrity of site. Close to or through 1 other area of ancient woodland. Close to or through 2 areas of woodland.	Earthworks			
			Acceptable Cut	801,202 m ³		
			Bulk Fill	2,204,543 m ³		
			Balance	- 1,403,341 m ³ (Deficit)		
			Structures		Cost significant factors for structures:	
			3 No of overbridges		1. Skew (> 30°);	
			4 No of underbridges		2. AWPR Curvature (Straight,Curved);	
			10 No of underpasses		3. Earthworks (OB>10m, UB>9m);	
			4 cost significant factors affecting overbridges		4. Slip Roads (Y,N);	
			4 cost significant factors affecting underbridges		5. Side Road Realignment (Y,N).	
			20 cost significant factors affecting underpasses		6. Pipeline Structure (Y,N).	
			Utilities			
			Significant impacts on:			
			2 Oil Pipelines			
			2 Natural Gas Pipelines			
			1 High Voltage O/H Elec			
			0 High Pressure Gas	Route in fill		
			2 Fibreoptics			
			0 Trunk Water Main			
	Cultural Heritage	Direct - Direct impact on 4 sites of Regional Importance, 3 sites Local Importance, 3 sites of Unknown Importance. Lairhilllock Bridge is a Category C(s) Listed Building Proximity - 17 sites located within 250m. Of these 15 are of Local importance, the importance of 2 sites is unknown.				

Aberdeen Western Peripheral Route
Initial Assessment Matrix
Southern Section - Red Route

Off-line from B979, east of Red Moss, west of Cookney, west of Berry Top

	Environmental Issues		Engineering Issues		Economic Issues	
	Issue	Comments	Issue	Comments	Issue	Comments
	Human/Property		Length		Pro-rata Section Cost (compared to lowest cost option) + 5.9%	Note: Cost estimate is based on pro-rata of Murtle Route cost estimate based on length only
	Demolition 3 No		9.0 km			
	Proximity 2 0-50m 9 50-100m 31 100-200m 28 200-300m	Cumulative totals: (2) (11) (42) (70)	Junctions		Factors With Potential Significant Cost Influence	Note: These factors would increase the above costs
	Sensitive Sites	Lairhillock School (<200m)	At grade connection with Stonehaven slip roads	Provides access to A90	Structures	See cost factors
	Land Use	Less than 50m west of Cookney Village Severance of Blackhill Community (west of Cookney) Mill Inn and Lairhillock School within 100m	Horizontal Alignment		Earthworks	Surplus of acceptable material would benefit remainder of route
	Landscape	Medium sensitivity Open Farmland for 4.2km; Hill for 1.5km; Wooded farmland for 3.0km; Valley for approx. 0.3km. Route will sever the higher open farmlands of the Hill of Megray and severs the narrow valley of the Burn of Muchalls. Route cuts around the hill on which the small settlement of Cookney is located. The route follows higher ground with a poor landscape fit. The hillside cuttings will be prominent in views from the town of Stonehaven	No sub-standard elements			
			Vertical Alignment			
			5% grade on mainline			
			Local Routes			
			13 Side Road Crossings 4 Diverted/Stopped Up			
			Earthworks			
			Acceptable Cut Bulk Fill Balance	2,166,783 m ³ 574,733 m ³ 1,592,049 m ³ (Surplus)		
	Water Quality		Structures		Cost significant factors for structures:	
	SAC - High impact	4 Watercourses associated with SAC with potential for high impact	6 No of overbridges 2 No of underbridges 7 No of underpasses		1. Skew (> 30°); 2. AWPR Curvature (Straight,Curved); 3. Earthworks (OB>10m, UB>9m); 4. Slip Roads (Y,N); 5. Side Road Realignment (Y,N). 6. Pipeline Structure (Y,N).	
	SAC - Medium impact	2 watercourses associated with SAC with potential for medium impact	14 cost significant factors affecting overbridges 3 cost significant factors affecting underbridges 7 cost significant factors affecting underpasses			
	Non SAC - High Impact	2 other watercourses with potential for high impact	Utilities			
	Ecology	Limpet Ancient Woodland, Limpet Burn. Route will result in habitat loss western edge of wood, fragmentation and disturbance. Burn of Muchalls. drains from Red Moss SAC, high value burn with riparian woodland. Route will result in habitat loss, disturbance and increased fragmentation. Green Burn, route will result in habitat loss, disturbance and fragmentation. Red Moss of Netherly SAC. Potential to affect hydrology of SAC. Potential to affect integrity of site. Close to or through 3 areas of woodland.	Significant impacts on: 0 Oil Pipelines 0 Natural Gas Pipelines 1 High Voltage O/H Elec 0 High Pressure Gas 2 Fibreoptics 0 Trunk Water Main			
	Cultural Heritage	Direct - Direct Impact on 7 sites. 3 of Local Importance, 4 of Unknown Importance. Proximity - 10 sites in total located with 250m. 2 sites Regional Importance, 7 sites of Local Importance, including Netherley Road Bridge a Category C(s) Listed Building, 1 site Unknown importance.				

	Environmental Issues		Engineering Issues		Economic Issues	
	Issue	Comments	Issue	Comments	Issue	Comments
	Human/Property		Length		Pro-rata Section Cost (compared to lowest cost option) + 0.0%	Note: Cost estimate is based on pro-rata of Murtle Route cost estimate based on length only
	Demolition 1 No		8.5 km			
	Proximity 1 0-50m 6 50-100m 21 100-200m 18 200-300m	Cumulative totals: (1) (7) (28) (46)	Junctions At grade connection with Stonehaven slip roads	Provides access to A90	Factors With Potential Significant Cost Influence	Note: These factors would increase the above costs
	Sensitive Sites	none	Horizontal Alignment No sub-standard elements		Structures	See cost factors
	Land Use	Less than 50m east of Cookney Village Severance and loss of some woodland (community land) near Forrester's Croft	Vertical Alignment 5% grade on mainline		Earthworks	Surplus of acceptable material would benefit remainder of route
	Landscape	Medium sensitivity Open Farmland for approx. 3.4m; Hill for approx. 2.6km; Wooded Farmland for approx. 1.9km; Valley for approx. 0.6km. Route will sever the higher open farmlands of the Hill of Megray and severs the narrow valley of the Burn of Muchalls. Route cuts around the hill on which the small settlement of Cookney is located. The route follows higher ground with a poor landscape fit. The hillside cuttings will be prominent in views from the town of Stonehaven	Local Routes 13 Side Road Crossings 3 Diverted/Stopped Up			
	Water Quality		Earthworks Acceptable Cut Bulk Fill Balance	1,259,807 m ³ 669,627 m ³ 509,180 m ³ (Surplus)		
	SAC - High impact	1 watercourse associated with SAC with potential for high impact				
	SAC - Medium impact	none				
	Non SAC - High Impact	1 other watercourse with potential for high impact				
	Ecology	Burn of Muchalls , drains from Red Moss SAC, high value burn with riparian woodland. Route would result in habitat loss, disturbance and increased fragmentation. Limpet Ancient Woodland , Limpet Burn. Route will result in habitat loss, fragmentation and disturbance. Close to or through 1 area of ancient woodland. Close to or through 2 areas of woodland.	Structures 8 No of overbridges 2 No of underbridges 3 No of underpasses 16 cost significant factors affecting overbridges 4 cost significant factors affecting underbridges 4 cost significant factors affecting underpasses	Cost significant factors for structures: 1. Skew (> 30°); 2. AWPR Curvature (Straight,Curved); 3. Earthworks (OB>10m, UB>9m); 4. Slip Roads (Y,N); 5. Side Road Realignment (Y,N). 6. Pipeline Structure (Y,N).		
	Cultural Heritage	Direct - Direct impact on 6 sites. 1 is of Regional Importance, 3 of Local Importance and 3 are of Unknown Importance. Proximity - 6 sites within 250m. 5 of Local Importance, 1 of Unknown Importance.	Utilities Significant impacts on: 0 Oil Pipelines 0 Natural Gas Pipelines 1 High Voltage O/H Elec 0 High Pressure Gas 2 Fibreoptics 0 Trunk Water Main			

Aberdeen Western Peripheral Route
Initial Assessment Matrix
Southern Section - Purple Route

Off-line of B979, east of Red Moss, east of Cookney, west of Berry Top

	Environmental Issues		Engineering Issues		Economic Issues	
	Issue	Comments	Issue	Comments	Issue	Comments
	<p>Human/Property</p> <p>Demolition 0 No</p> <p>Proximity 0 0-50m 6 50-100m 29 100-200m 21 200-300m</p> <p>Sensitive Sites</p>	<p>Cumulative totals: (0) (6) (35) (56)</p> <p>Lairhillock School (<200m)</p>	<p>Length</p> <p>9.5 km</p> <p>Junctions</p> <p>At grade connection with Stonehaven slip roads</p> <p>Horizontal Alignment</p> <p>No sub-standard elements</p> <p>Vertical Alignment</p> <p>5% grade on mainline</p> <p>Local Routes</p> <p>14 Side Road Crossings 5 Diverted/Stopped Up</p> <p>Earthworks</p> <p>Acceptable Cut Bulk Fill Balance</p>	<p>Provides access to A90</p> <p>1,594,447 m³ 285,755 m³ 1,308,692 m³ (Surplus)</p> <p>Structures</p> <p>9 No of overbridges 1 No of underbridges 3 No of underpasses 19 cost significant factors affecting overbridges 2 cost significant factors affecting underbridges 4 cost significant factors affecting underpasses</p> <p>Utilities</p> <p>Significant impacts on: 0 Oil Pipelines 0 Natural Gas Pipelines 1 High Voltage O/H Elec 0 High Pressure Gas 2 Fibreoptics 0 Trunk Water Main</p>	<p>Pro-rata Section Cost (compared to lowest cost option) + 11.7%</p> <p>Factors With Potential Significant Cost Influence</p> <p>Structures Earthworks</p>	<p>Note: Cost estimate is based on pro-rata of Murtle Route cost estimate based on length only</p> <p>Note: These factors would increase the above costs</p> <p>See cost factors</p> <p>Surplus of acceptable material would benefit remainder of route</p>
	<p>Land Use</p> <p>Landscape</p> <p>Water Quality</p> <p>SAC - High impact SAC - Medium impact Non SAC - High Impact</p> <p>Ecology</p>	<p>Less than 50m east of Cookney Village Mill Inn and Lairhillock School within 100m</p> <p>Medium sensitivity Open Farmland for 3.2km; Hill for 3.0km; Wooded farmland for 2.1km and Valley for 1.2km Route will sever the higher open farmlands of the Hill of Megray and severs the narrow valley of the Burn of Muchalls. Route cuts around the hill on which the small settlement of Cookney is located. The route follows higher ground with a poor landscape fit The hillside cuttings will be prominent in views from the town of Stonehaven</p> <p>2 Watercourses associated with SAC with potential for high impact none 1 other watercourse with potential for high impact</p> <p>Limpet Ancient Woodland, Limpet Burn. Route will result in habitat loss at western edge of wood as well as fragmentation and disturbance. Burn of Muchalls, drains from Red Moss SAC, high value burn with riparian woodland. Route will result in habitat loss, disturbance and increased fragmentation. Red Moss of Netherly SAC. Potential to affect hydrology of SAC. Potential to affect integrity of site.</p> <p>Close to or through 2 areas of woodland.</p>	<p>Earthworks</p> <p>Acceptable Cut Bulk Fill Balance</p> <p>Structures</p> <p>9 No of overbridges 1 No of underbridges 3 No of underpasses 19 cost significant factors affecting overbridges 2 cost significant factors affecting underbridges 4 cost significant factors affecting underpasses</p> <p>Utilities</p> <p>Significant impacts on: 0 Oil Pipelines 0 Natural Gas Pipelines 1 High Voltage O/H Elec 0 High Pressure Gas 2 Fibreoptics 0 Trunk Water Main</p>	<p>Cost significant factors for structures:</p> <p>1. Skew (> 30°); 2. AWPR Curvature (Straight,Curved); 3. Earthworks (OB>10m, UB>9m); 4. Slip Roads (Y,N); 5. Side Road Realignment (Y,N). 6. Pipeline Structure (Y,N).</p>		
	<p>Cultural Heritage</p>	<p>Direct impact on 6 sites identified. 2 are of Local Importance, 4 of Unknown Importance. Proximity - 2 sites located within 250m. 1 of these is of Regional Importance, 1 of these of Local Importance.</p>				

Aberdeen Western Peripheral Route
Initial Assessment Matrix
Central Section - Green Route

From Westside, junction at Burnside, west of Kirkton of Maryculter, crosses River Dee west of Maryculter Bridge, connects to A90 at Charleston passing south of Hare Moss.

	Environmental Issues		Engineering Issues		Economic Issues	
	Issue	Comments	Issue	Comments	Issue	Comments
	<p>Human/Property</p> <p>Demolition 18 No</p> <p>Proximity 5 0-50m 20 50-100m 36 100-200m 45 200-300m</p> <p>Sensitive Sites</p>	<p>Cumulative totals: (5) (25) (61) (106)</p> <p>Maryculter School (<300m)</p>	<p>Length</p> <p>13.1 km</p> <p>Junctions</p> <p>1 Grade separated at Mains of Altries</p> <p>Horizontal Alignment</p> <p>No sub-standard elements</p>	<p>(Commences at Charleston Jcn) Priority to Stonehaven Roundabout elevated above mainline</p>	<p>Pro-rata Section Cost (compared to lowest cost option) + 15.0%</p> <p>Factors With Potential Significant Cost Influence</p> <p>Structures</p> <p>Property</p> <p>Earthworks</p>	<p>Note: Cost estimate is based on pro-rata of Murtle Route cost estimate based on length only</p> <p>Note: These factors would increase the above costs</p> <p>See cost factors</p> <p>Proximity to properties may result in increased costs No. of demolitions will result in increased costs</p> <p>Deficit of acceptable material likely to result in increased costs for scheme as a whole</p>
	<p>Land Use</p>	<p>Road and junction within 50m of School at Standing Stones Within ~ 50m of Caravan/Camp Site</p>	<p>Vertical Alignment</p> <p>No sub-standard elements</p>			
	<p>Landscape</p>	<p>Cuts through 2.0km High sensitivity; through 7.5km of medium sensitivity 2.5km in Area of Landscape Significance. Cuts through small scale, exposed upland landscape of Merchants Croft. Passes through Open Farmland for approx. 9.2km; Wooded Farmland for approx. 3.7km; and, Valley for 0.2km. Good landscape fit between Mill of Monquich and Altries (approx. 2.4km). Reasonable fit between Mill of Monquich and River Dee (approx. 4.2km); poor landscape fit between Altries and Greenloaning (approx. 2.7km); reasonable fit between Greenloaning and Charleston (approx. 3.8km). Impacts on open farmland and views from scattered dwellings.</p>	<p>Local Routes</p> <p>20 Side Road Crossings 5 Diverted/Stopped Up</p> <p>Earthworks</p> <p>Acceptable Cut 1,420,476 m³ Bulk Fill 3,346,613 m³ Balance -1,926,138 m³ (Deficit)</p> <p>Structures</p> <p>8 No of overbridges 7 No of underbridges 2 No of underpasses 10 Cost significant factors affecting overbridge 9 Cost significant factors affecting underbridge 2 Cost significant factors affecting underpasses</p>	<p>Cost significant factors for structures:</p> <p>1. Skew (> 30°); 2. AWPR Curvature (Straight,Curved); 3. Earthworks (OB>10m, UB>9m); 4. Slip Roads (Y,N); 5. Side Road Realignment (Y,N). 6. Pipeline Structure (Y,N).</p>		
	<p>Water Quality</p> <p>SAC - High impact</p> <p>SAC - Medium impact</p> <p>Non SAC - High Impact</p>	<p>1 watercourse associated with SAC with potential for high impact</p> <p>1 watercourse associated with SAC with potential for medium impact</p> <p>none</p>				
	<p>Ecology</p>	<p>Crynoch Burn, River Dee SAC. Direct impact from new crossing resulting in habitat loss, fragmentation, potential to affect integrity of the SAC. Long Established Woodland at Greenhowe, habitat loss, disturbance and fragmentation Hare Moss, route will result in habitat loss along southern edge, habitat fragmentation, potential to affect hydrology of</p> <p>Close to or through 2 areas of ancient woodland. Close to or through 7 areas of woodland.</p>	<p>Utilities</p> <p>Significant impacts on:</p> <p>0 Oil Pipelines 0 Natural Gas Pipelines 1 High Voltage O/H Elec 2 High Pressure Gas 2 Fibreoptics 1 Trunk Water Main</p>	<p>Route in cut at 1 crossing</p>		
	<p>Cultural Heritage</p>	<p>Direct - Direct impact on 8 sites. 1 is of Regional Importance, 5 of Local Importance, 1 is of Unknown Importance. Proximity - 15 sites lie within 250m. All are of Local Importance.</p>				

Aberdeen Western Peripheral Route
Initial Assessment Matrix
Central Section - Blue Route

From Westside, west of Kirkton of Maryculter, junction at Kingcausie, crosses River Dee east of Maryculter Bridge, connects to A90 at Charleston passing south of Hare Moss.

	Environmental Issues		Engineering Issues		Economic Issues	
	Issue	Comments	Issue	Comments	Issue	Comments
Human/Property			Length		Pro-rata Section Cost (compared to lowest cost option) + 10.5%	Note: Cost estimate is based on pro-rata of Murtle Route cost estimate based on length only
Demolition 10 No			12.6 km		Factors With Potential Significant Cost Influence	Note: These factors would increase the above costs
Proximity 3 0-50m 23 50-100m 44 100-200m 62 200-300m	Cumulative totals: (3) (26) (70) (132)		Junctions 1 At-grade roundabout at Kingcausie	(Commences at Charleston Jcn) 100m ICD Charleston Priority	Structures	See cost factors
Sensitive Sites	Maryculter School (<300m)		Horizontal Alignment No sub-standard elements		Property	Proximity to properties may result in increased costs No. of demolitions will result in increased costs
Land Use	Maryculter School (<300m) Within 20m of Village Kirkton of Maryculter Loss of woodland (community land) Within 50m of Storybook Glen Theme Park.		Vertical Alignment 6% grade on mainline	On southern leg approach to roundabout	Earthworks	Surplus of acceptable material would benefit remainder of route
Landscape	Junction in Area of Landscape Significance (ALS); 2.8km of route in ALS Passes through 4.1km Hill; 6.2km of Open Farmland; 2.2km of Wooded Farmland; 0.1km of Valley. Cuts through 2.8km High sensitivity; 10.5km of medium sensitivity. Reasonable landscape fit between Mill of Monquich and Kirkton of Maryculter (4km); poor landscape fit between Kirkton of Maryculter and River Dee (1.1km); poor landscape fit between River Dee and Merchants Croft (2.5km); reasonable landscape fit between Merchants Croft and Impacts on views from Peterculter and Milltimber as cuttings through Storybook Glen and past Maryculter will be visible; Will sever forestry on crest of ridgeline above Dee Valley; junction will be prominent in cutting		Local Routes 20 Side Road Crossings 8 Diverted/Stopped Up			
Water Quality			Earthworks Acceptable Cut Bulk Fill Balance	2,547,524 m ³ 1,055,570 m ³ 1,491,954 m ³ (Surplus)		
SAC - High impact	1 watercourse associated with SAC with potential for high impact		Structures 8 No of overbridges 6 No of underbridges 1 No of underpasses 16 Cost significant factors affecting overbridge 6 Cost significant factors affecting underbridge 1 Cost significant factors affecting underpasses	Cost significant factors for structures: 1. Skew (> 30°); 2. AWPR Curvature (Straight,Curved); 3. Earthworks (OB>10m, UB>9m); 4. Slip Roads (Y,N); 5. Side Road Realignment (Y,N). 6. Pipeline Structure (Y,N).		
SAC - Medium impact	none		Utilities Significant impacts on: 0 Oil Pipelines 0 Natural Gas Pipelines 1 High Voltage O/H Elec 2 High Pressure Gas 2 Fibreoptics 1 Trunk Water Main	Route in cut at 1 crossing		
Non SAC - High Impact	2 watercourses with potential for high impact					
Ecology	Berry Top Hill , direct impact on wet heath/ acid grassland and scrub resulting in habitat loss and severe fragmentation. Crynoch Burn , River Dee SAC. Direct impact from new crossing resulting in habitat loss, fragmentation, potential to affect integrity of the SAC. Blaikiewell Burn , drains to River Dee SAC. Route will result in habitat loss, disturbance and fragmentation. Potential to affect integrity of SAC. Cleanhill Wood, SESA . Route will result in habitat loss and severe fragmentation of Long Established Woodland. Hare Moss , route will result in habitat loss along southern edge, habitat fragmentation, potential to affect hydrology of					
	Close to or through 11 areas of woodland.					
Cultural Heritage	Direct - Direct Impact on 13 sites. 3 of Regional Importance, 9 of Local Importance, 1 Unknown Importance Proximity - 31 sites located within 250m. 6 of Regional Importance, including 3 Category B Listed Buildings, 25 sites of Local Importance, including 2 Category C(s) Listed					

Aberdeen Western Peripheral Route
Initial Assessment Matrix
Central Section - Blue Route (Hare Moss)

As per Blue Route but passing north of Hare Moss.

	Environmental Issues		Engineering Issues		Economic Issues	
	Issue	Comments	Issue	Comments	Issue	Comments
Human/Property			Length		Pro-rata Section Cost (compared to lowest cost option) + 10.5%	Note: Cost estimate is based on pro-rata of Murtle Route cost estimate based on length only
Demolition 10 No			12.6 km			
Proximity		Cumulative totals:	Junctions	(Commences at Charleston Jcn)	Factors With Potential Significant Cost Influence	Note: These factors would increase the above costs
2 0-50m		(2)	1 At-grade roundabout at Kingcausie	100m ICD Charleston Priority	Structures	See cost factors
17 50-100m		(19)			Property	Proximity to properties may result in increased costs
44 100-200m		(63)	Horizontal Alignment			No. of demolitions will result in increased costs
64 200-300m		(127)	1 x1 step below des min	(720m radius)	Earthworks	Surplus of acceptable material would benefit remainder of route
Sensitive Sites		Maryculter School (<300m)	Vertical Alignment			
			5% grade on mainline			
Land Use		Maryculter School (<300m) Within 20m of Village Kirkton of Maryculter Loss of woodland (community land) Within 50m of Storybook Glen Theme Park.	Local Routes			
			10 Side Road Crossings 9 Diverted/Stopped Up			
Landscape		Junction in Area of Landscape Significance (ALS); 2.8km of route in ALS Passes through 4.4km Hill; 4.9km of Open Farmland; 3.2km of Wooded Farmland; 0.1km of Valley. Cuts through 2.8km High sensitivity; 10.5km of medium sensitivity. Reasonable landscape fit between Mill of Monquich and Kirkton of Maryculter (3.9km); poor landscape fit between Kirkton of Maryculter and River Dee (0.9km); poor landscape fit between River Dee and Greenloaning (3.9km); reasonable landscape fit between Greenloaning and Charleston (3.9km). Impacts on views from Peterculter and Milltimber as cuttings through Storybook Glen and past Maryculter will be visible; Will sever forestry on crest of ridgeline above Dee Valley; junction will be prominent in cutting at base of slope.	Earthworks			
			Acceptable Cut	2,644,844 m ³	Cost significant factors for structures:	
			Bulk Fill	992,524 m ³	1. Skew (> 30°);	
			Balance	1,652,320 m ³ (Surplus)	2. AWPR Curvature (Straight,Curved);	
					3. Earthworks (OB>10m, UB>9m);	
					4. Slip Roads (Y,N);	
					5. Side Road Realignment (Y,N).	
					6. Pipeline Structure (Y,N).	
			Structures			
			8 No of overbridges			
			5 No of underbridges			
			- No of underpasses			
			17 Cost significant factors affecting overbridge			
			12 Cost significant factors affecting underbridge			
			- Cost significant factors affecting underpasses			
Water Quality			Utilities			
SAC - High impact		1 watercourse associated with SAC with potential for high impact	Significant impacts on:			
SAC - Medium impact		none	0 Oil Pipelines			
Non SAC - High Impact		2 watercourses with potential for high impact	0 Natural Gas Pipelines			
			1 High Voltage O/H Elec			
			2 High Pressure Gas			
			2 Fibreoptics			
			1 Trunk Water Main			
Ecology		Berry Top Hill , direct impact on wet heath/ acid grassland and scrub resulting in habitat loss and severe fragmentation. Crynoch Burn , River Dee SAC. Direct impact from new crossing resulting in habitat loss, fragmentation, potential to affect integrity of the SAC. Blaikiewell Burn , drains to River Dee SAC. Route will result in habitat loss, disturbance and fragmentation. Potential to affect integrity of SAC. Cleanhill Wood, SESA . Route will result in habitat loss and severe fragmentation of Long Established Woodland. Hare Moss , route will result in habitat loss along northern edge, habitat fragmentation, potential to affect hydrology of				
		Close to or through 11 areas of woodland.				
Cultural Heritage		Direct - Direct Impact on a total of 13 sites. Of these 3 are of Regional Importance, 9 of Local Importance, 1 of unknown Importance Proximity - 24 sites located within 250m. Of these 4 are of Regional Importance, including 3 Category B Listed Buildings, and 20 are of Local Importance, including 2 Category C(s) Listed Buildings				

Aberdeen Western Peripheral Route
Initial Assessment Matrix
Central Section - Blue Route (Schoolhill)

As per Blue Route but connecting to junction on A90 at Schoolhill.

	Environmental Issues		Engineering Issues		Economic Issues	
	Issue	Comments	Issue	Comments	Issue	Comments
Human/Property			Length		Pro-rata Section Cost (compared to lowest cost option) + 3.6%	Note: Cost estimate is based on pro-rata of Murtle Route cost estimate based on length only
Demolition 10 No			11.8 km			
Proximity 5 0-50m 22 50-100m 40 100-200m 54 200-300m	Cumulative totals: (5) (27) (67) (121)		Junctions		Factors With Potential Significant Cost Influence	Note: These factors would increase the above costs
Sensitive Sites	Maryculter School (<300m)		1 At-grade roundabout at Kingcausie	100m ICD NOTE - Alignment ties into Schoolhill Junction on A90	Structures	See cost factors
Land Use	Within 60m of School at Standing Stones Within 20m of Village Kirkton of Maryculter Loss of woodland (community land) Within 50m of Storybook Glen Theme Park.		Horizontal Alignment		Property	Proximity to properties may result in increased costs No. of demolitions will result in increased costs
			No sub-standard elements		Earthworks	Surplus of acceptable material would benefit remainder of route
Landscape	Cuts through 2.8km High sensitivity; 9.0km of medium sensitivity. Junction in Area of Landscape Significance (ALS); 2.8km in ALS Open Farmland for 5.4km; Hill for 4.1km; Valley for 0.1km; Wooded Farmland for 2.2km. Reasonable landscape fit between Mill of Monquich and Kirkton of Maryculter (3.8km); poor landscape fit between Kirkton of Maryculter and River Dee (0.9km); poor landscape fit between River Dee and Merchants Croft (2.3km); reasonable landscape fit between Merchants Croft and Charleston (4.8km). Impacts on views from Peterculter and Milltimber as cuttings through Storybook Glen and past Maryculter will be visible; Will sever forestry on crest of ridgeline above Dee Valley; junction will be prominent in cutting at base of slope.		Vertical Alignment		Other	Impact on Schoolhill development may result in increased costs
			No sub-standard elements			
			Local Routes			
			12 Side Road Crossings 5 Diverted/Stopped Up			
			Earthworks			
			Acceptable Cut Bulk Fill Balance	2,565,378 m ³ 1,277,284 m ³ 1,288,094 m ³ (Surplus)		
Water Quality			Structures		Cost significant factors for structures:	
SAC - High impact	1 watercourse associated with SAC with potential for high impact		8 No of overbridges 6 No of underbridges 1 No of underpasses		1. Skew (> 30°);	
SAC - Medium impact	none		16 Cost significant factors affecting overbridge		2. AWPR Curvature (Straight,Curved);	
Non SAC - High Impact	2 watercourses with potential for high impact		6 Cost significant factors affecting underbridge 1 Cost significant factors affecting underpasses		3. Earthworks (OB>10m, UB>9m);	
Ecology			Utilities		4. Slip Roads (Y,N);	
	Berry Top Hill , direct impact on wet heath/ acid grassland and scrub resulting in habitat loss and severe fragmentation. Crynoch Burn , River Dee SAC. Direct impact from new crossing resulting in habitat loss, fragmentation, potential to affect integrity of the SAC. Blaikiewell Burn , drains to River Dee SAC. Route will result in habitat loss, disturbance and fragmentation. Potential to affect integrity of SAC. Cleanhill Wood, SESA . Route will result in habitat loss and severe fragmentation of Long Established Woodland. Hare Moss , route will result in habitat loss along southern edge, habitat fragmentation, potential to affect hydrology of		Significant impacts on: 0 Oil Pipelines 0 Natural Gas Pipelines 1 High Voltage O/H Elec 2 High Pressure Gas 2 Fibreoptics 1 Trunk Water Main	Route in cut at 1 crossing	5. Side Road Realignment (Y,N). 6. Pipeline Structure (Y,N).	
	Close to or through 10 areas of woodland.					
Cultural Heritage	Direct - Direct impact on 2 sites of Regional Importance and 2 sites of Local Importance. Proximity - 12 sites located within 250m. 3 are of Regional Importance (All Category B Listed Buildings). 9 are of Local Importance, including 3 Category C(s) Listed Buildings.					

	Environmental Issues		Engineering Issues		Economic Issues	
	Issue	Comments	Issue	Comments	Issue	Comments
Human/Property			Length		Pro-rata Section Cost (compared to lowest cost option) + 3.6%	Note: Cost estimate is based on pro-rata of Murtle Route cost estimate based on length only
Demolition 6 No			11.8 km			
Proximity 1 0-50m 25 50-100m 40 100-200m 39 200-300m		Cumulative totals: (1) (26) (66) (105)	Junctions	(Commences at Charleston Jcn) Priority to Stonehaven Roundabout elevated above mainline	Factors With Potential Significant Cost Influence	Note: These factors would increase the above costs
Sensitive Sites	none		1 Grade separated at Burnhead		Structures	See cost factors
Land Use		Severance of Cleanhill Wood (community land) Impact on Storybook Glen Themepark Severance of Cleanhill Wood (community land)	Horizontal Alignment		Property	Proximity to properties may result in increased costs No. of demolitions will result in increased costs
			No sub-standard elements			
Landscape		Cuts through 1.2km High sensitivity; 6.5km of medium sensitivity. 1.2km in Area of Landscape Significance. Cuts through small scale, exposed upland landscape of Merchants Croft. Passes through Hill for 1.4km; Open Farmland for 9.2km; Wooded Farmland for 1km; Valley for 0.2km. Reasonable landscape fit between Mill of Monquich and Blaikiewell (3.8km); poor landscape fit between Blaikiewell and River Dee (1.3km); poor landscape fit between Blaikiewell and Greenloaning (1.9km); reasonable landscape fit between Greenloaning and Charleston (4.8km) Impacts on views from Peterculter and Milltimber as cuttings through Storybook Glen and past Maryculter will be visible; Will sever forestry on crest of ridgeline above Dee Valley; junction will be prominent in cutting	Vertical Alignment			
			No sub-standard elements			
			Local Routes			
			19 Side Road Crossings 3 Diverted/Stopped Up			
Water Quality			Earthworks			
SAC - High impact	1 watercourse associated with SAC with potential for high impact		Acceptable Cut	1,751,341 m ³		
SAC - Medium impact	none		Bulk Fill	1,779,702 m ³		
Non SAC - High Impact	none		Balance	-28,361 m ³ (Deficit)		
Ecology		Berry Top Hill , direct impact on wet heath/ acid grassland and scrub resulting in habitat loss and severe fragmentation. Crynoch Burn , River Dee SAC. Direct impact from new crossing resulting in habitat loss, fragmentation, potential to affect integrity of the SAC. Blaikiewell Burn , drains to River Dee SAC. Route will result in habitat loss, disturbance and fragmentation. Potential to affect integrity of SAC. Cleanhill Wood, SESA . Route will result in habitat loss and severe fragmentation of Long Established Woodland. Long Established Woodland at Greenhowe , habitat loss, disturbance and fragmentation Hare Moss , route will result in habitat loss along southern edge, habitat fragmentation, potential to affect hydrology of	Structures	Cost significant factors for structures: 1. Skew (> 30°); 2. AWPR Curvature (Straight,Curved); 3. Earthworks (OB>10m, UB>9m); 4. Slip Roads (Y,N); 5. Side Road Realignment (Y,N). 6. Pipeline Structure (Y,N).		
		Close to or through 10 areas of woodland.	8 No of overbridges 10 No of underbridges 1 No of underpasses 11 Cost significant factors affecting overbridge 17 Cost significant factors affecting underbridge 1 Cost significant factors affecting underpasses			
Cultural Heritage		Direct - Direct Impact on 10 sites. 2 are of Regional Importance, 7 are of Local Importance, 1 is of Unknown Importance. Proximity - 24 sites within 250m. 4 sites of Regional Importance, including 1 Category B Listed Buildings, and 20 of Local Importance	Utilities	Route in cut at 1 crossing		
			Significant impacts on: 0 Oil Pipelines 0 Natural Gas Pipelines 1 High Voltage O/H Elec 2 High Pressure Gas 2 Fibreoptics 1 Trunk Water Main			

Aberdeen Western Peripheral Route
Initial Assessment Matrix
Central Section - Orange Route

From Crossley, junction at Burnhead, east of Kirkton of Maryculter, crosses River Dee east of Maryculter Bridge, connects to A90 at Charleston passing south of Hare Moss.

	Environmental Issues		Engineering Issues		Economic Issues	
	Issue	Comments	Issue	Comments	Issue	Comments
	<p>Human/Property</p> <p>Demolition 2 No</p> <p>Proximity 0 0-50m 11 50-100m 41 100-200m 32 200-300m</p> <p>Sensitive Sites</p>	<p>Cumulative totals: (0) (11) (52) (84)</p> <p>none</p>	<p>Length</p> <p>11.4 km</p> <p>Junctions</p> <p>1 Grade separated at Burnhead</p> <p>Horizontal Alignment</p> <p>No sub standard elements</p> <p>Vertical Alignment</p> <p>No sub standard elements</p> <p>Local Routes</p> <p>19 Side Road Crossings 7 Diverted/Stopped Up</p> <p>Earthworks</p> <p>Acceptable Cut Bulk Fill Balance</p> <p>Structures</p> <p>7 No of overbridges 6 No of underbridges 2 No of underpasses 11 Cost significant factors affecting overbridge 12 Cost significant factors affecting underbridge 3 Cost significant factors affecting underpasses</p> <p>Utilities</p> <p>Significant impacts on: 0 Oil Pipelines 0 Natural Gas Pipelines 1 High Voltage O/H Elec 2 High Pressure Gas 2 Fibreoptics 1 Trunk Water Main</p>	<p>(Commences at Charleston Jcn) Priority to Stonehaven Roundabout elevated above mainline</p>	<p>Pro-rata Section Cost (compared to lowest cost option) + 0.0%</p> <p>Factors With Potential Significant Cost Influence</p> <p>Structures</p> <p>Property</p> <p>Earthworks</p>	<p>Note: Cost estimate is based on pro-rata of Murtle Route cost estimate based on length only</p> <p>Note: These factors would increase the above costs</p> <p>See cost factors</p> <p>Proximity to properties may result in increased costs</p> <p>Deficit of acceptable material likely to result in increased costs for scheme as a whole</p>
	<p>Land Use</p>	<p>Impact on Storybook Glen Themepark Loss of woodland (community land) around Kingcausie</p>				
	<p>Landscape</p>	<p>Cuts through 1.2km High sensitivity; 6.5km of medium sensitivity. Passes through Hill for 3.6km; Open Farmland for 6.9km; Wooded Farmland for 0.7km; Valley for 0.2km. Cuts through the higher exposed open landscape around Stranog Hill; Cuts through small scale, exposed upland landscape of Merchants Croft. Poor landscape fit between Rothnick and Blaikiewell (3.5km); poor landscape fit between Blaikiewell and Greenloaning Impacts on the open exposed hill landscape and views from remote scattered properties.</p>				
	<p>Water Quality</p> <p>SAC - High impact SAC - Medium impact Non SAC - High Impact</p>	<p>1 watercourse associated with SAC with potential for high impact none none</p>				
	<p>Ecology</p>	<p>Blaikiewell Burn, drains to River Dee SAC. Route will result in habitat loss, disturbance and fragmentation. Potential to affect integrity of SAC. Long Established Woodland at Greenhowe, habitat loss, disturbance and fragmentation Hare Moss, route will result in habitat loss along southern edge, habitat fragmentation, potential to affect hydrology of Close to or through 7 areas of woodland.</p>				
	<p>Cultural Heritage</p>	<p>Direct - 8 sites in total. 1 of Regional Importance, 6 of Local Importance, 1 of Unknown Importance. Proximity - 27 sites located within 250m. 1 site of National Importance. This site is also a SAM. 1 site of Regional Importance. This site is a Category B Listed Building. 21 sites of Local Importance.</p>				

Aberdeen Western Peripheral Route
Initial Assessment Matrix
Central Section - Purple Route

From Westside, junction at Craigend, crosses River Dee east of Maryculter Bridge, connects to A90 at Charleston passing south of Hare Moss.

	Environmental Issues		Engineering Issues		Economic Issues	
	Issue	Comments	Issue	Comments	Issue	Comments
	Human/Property		Length		Pro-rata Section Cost (compared to lowest cost option) + 5.3%	Note: Cost estimate is based on pro-rata of Murtle Route cost estimate based on length only
	Demolition 3 No		12.0 km			
	Proximity 2 0-50m 17 50-100m 38 100-200m 42 200-300m	Cumulative totals: (2) (19) (57) (99)	Junctions 1 Grade separated junction at Craingles	(Commences at Charleston Jcn)	Factors With Potential Significant Cost Influence	Note: These factors would increase the above costs
	Sensitive Sites	none	Horizontal Alignment No sub-standard elements		Structures	See cost factors
	Land Use	Impact on Storybook Glen Themepark Loss of woodland (community land) around Kingcausie Loss of woodland (community land) - Oldman wood	Vertical Alignment No sub-standard elements		Property	Proximity to properties may result in increased costs
	Landscape	Cuts through 1.2km of High Sensitivity; 7km of Medium Sensitivity. 1.2km of route in Area of Landscape Significance; 1.1km of route in Green Belt. Passes through 1.5km Hill; 9.3km Open Farmland; 1km Wooded Farmland; 0.2km Valley. Reasonable landscape fit between Mill of Monquich and Blaikiewell (3.9km); Poor landscape fit between Blaikiewell and River Dee (1.4km); Poor landscape fit between Cleanhill Wood and Greenloaning (1.9km); Reasonable landscape fit between Greenloaning and Charlestown (4.8km).	Local Routes 13 Side Road Crossings 5 Diverted/Stopped Up			
		Cuts through small scale, exposed upland landscape of Merchant's Croft Impacts on views from Peterculter and Milltimber as cuttings through Storybook Glen will be visible. Will sever forestry on crest of ridgeline above Dee Valley. Junction will be located on relatively high ground and will cut into Cleanhill Wood.	Earthworks Acceptable Cut 1,746,115 m ³ Bulk Fill 1,497,274 m ³ Balance 248,841 m ³ (Surplus)			
	Water Quality SAC - High impact SAC - Medium impact Non SAC - High Impact	1 watercourse associated with SAC with potential for high impact none none	Structures 8 No of overbridges 10 No of underbridges - No of underpasses 14 Cost significant factors affecting overbridge 16 Cost significant factors affecting underbridge - Cost significant factors affecting underpasses	Cost significant factors for structures: 1. Skew (> 30°); 2. AWPR Curvature (Straight,Curved); 3. Earthworks (OB>10m, UB>9m); 4. Slip Roads (Y,N); 5. Side Road Realignment (Y,N). 6. Pipeline Structure (Y,N).		
	Ecology	Berry Top Hill , direct impact on wet heath/ acid grassland and scrub resulting in habitat loss and severe fragmentation. Crynoch Burn , River Dee SAC. Direct impact from new crossing resulting in habitat loss, fragmentation, potential to affect integrity of the SAC. Blaikiewell Burn , drains to River Dee SAC. Route will result in habitat loss, disturbance and fragmentation. Potential to affect integrity of SAC. Cleanhill Wood, SESA . Route will result in habitat loss and severe fragmentation of Long Established Woodland. Durris Forest , Route will result in habitat loss and severe fragmentation of Long Established Woodland. Hare Moss , route will result in habitat loss along southern edge, habitat fragmentation, potential to affect hydrology of site. Long Established Woodland at Greenhowe , habitat loss, disturbance and fragmentation	Utilities Significant impacts on: 0 Oil Pipelines 0 Natural Gas Pipelines 1 High Voltage O/H Elec 2 High Pressure Gas 2 Fibreoptics 1 Trunk Water Main	Route in cut at 1 crossing		
	Cultural Heritage	Close to or through 10 areas of woodland. Direct - direct impact on 10 sites. 1 is of Regional Importance, 8 are of Local Importance, 1 is of Unknown Importance. Proximity - A total of 23 sites are located within 250m. 5 are of Regional Importance, including 2 Category B Listed Buildings, 18 are of Local Importance, including 1 Category C(s) Listed Building				

	Environmental Issues		Engineering Issues		Economic Issues	
	Issue	Comments	Issue	Comments	Issue	Comments
Human/Property			Length		Pro-rata Section Cost (compared to lowest cost option) + 0.0%	Note: Cost estimate is based on pro-rata of Murtle Route cost estimate based on length only
Demolition 23 No				8.7 km		
Proximity		Cumulative totals:	Junctions		Factors With Potential Significant Cost Influence	Note: These factors would increase the above costs
1 0-50m		(1)	2 Grade separated	A93 and A944 priority junctions (Ties in to Kingswells Jcn)	Structures	See cost factors
17 50-100m		(18)			Property	Proximity to properties may result in increased costs No. of demolitions will result in increased costs Likely to result in demolition of Kippie Lodge (or Intl School)
50 100-200m		(68)	Horizontal Alignment			
56 200-300m		(124)	No sub-standard elements			
Sensitive Sites		Camphill (<100m) International School (<100m) Albyn School Playing Fields (<100m)	Vertical Alignment			
			No sub-standard elements 6% grade on mainline at A93		Earthworks	Surplus of acceptable material would benefit remainder of route
Land Use		Impact on Camphill school Impact on International School Impact on Kippie Lodge (Petroleum Club) Severance of woodland North of Wooland (community land) Within 100m of Albyn School Playing Fields Severance and loss of parts of Milltimber Community	Local Routes			
			18 Side Road Crossings 7 Diverted/Stopped Up			
Landscape		Cuts through 8.75km of high-medium sensitivity. 0.2km in Area of Landscape Significance. Wooded Farmland for approx. 5.3km; Open Farmland for approx. 0.3km; Hill for approx. 2.5km; and, Valley for approx. 0.6km. Cuts through wooded Camphill Estate on valley floor; cuts through valley slope; cuts east of summit of Beanshill; cuts across Ord Burn valley; cuts across Cloghill summit. Reasonable fit between River Dee and Beanshill; poor landscape fit between Beanshill and North Kingswells (as it follows the blue route). Visual impacts associated with river and valley crossing at Milltimber and junction on south of river; significant impacts as route crosses higher ground and valleys.	Earthworks			
			Acceptable Cut	2,874,819 m ³		
			Bulk Fill	1,954,930 m ³		
			Balance	919,889 m ³ (Surplus)		
				(NB: Northern leg balance is deficit of 1.9m ³)		
			Structures	Cost significant factors for structures:		
Water Quality			7 No of overbridges	1. Skew (> 30°);		
SAC - High impact	none		4 No of underbridges	2. AWPR Curvature (Straight,Curved);		
SAC - Medium impact	1 watercourse associated with SAC with potential for medium impact		1 No of underpasses	3. Earthworks (OB>10m, UB>9m);		
Non SAC - High Impact	none		15 Cost significant factors affecting overbridge	4. Slip Roads (Y,N);		
			7 Cost significant factors affecting underbridge	5. Side Road Realignment (Y,N).		
			0 Cost significant factors affecting underpasses	6. Pipeline Structure (Y,N).		
Ecology		Deeside Railway DWS , route will result in habitat loss, disturbance and fragmentation. River Dee SAC , route will result in habitat loss, increased fragmentation, potential impacts during construction on water quality. Potential to affect integrity of SAC. Milltimber Ancient Woodland , route will result in habitat loss, disturbance and severe fragmentation. Rotten o' Gairn DWS , route will sever DWS from adjacent woodland resulting in habitat loss, disturbance, severe fragmentation. Auchlea Moss, DWS , route will sever DWS, resulting in habitat loss, disturbance and severe fragmentation. West Hatton Woods DWS , route will sever DWS, resulting in habitat loss and severe fragmentation. Close to or through 3 areas of woodland.	Utilities			
			Significant impacts on:			
			0 Oil Pipelines	Route in fill at 1 crossing		
			0 Natural Gas Pipelines			
			3 High Voltage O/H Elec	Route in cut at 1 crossing		
			0 High Pressure Gas	Route in cut at 1 crossing		
			3 Fibreoptics	Route in cut at 2 crossings		
			2 Trunk Water Main			
			2 Scottish Water Aqueduct			
Cultural Heritage		Direct - Direct Impact on 4 sites of Local Importance. Proximity - 25 Sites in total within 250m. 2 are of National Importance, 3 are of Regional Importance (including 1 Category B Listed Building), 19 are of Local Importance (including 1 Category C(s) Listed Building), 1 site Unknown				

	Environmental Issues		Engineering Issues		Economic Issues	
	Issue	Comments	Issue	Comments	Issue	Comments
Human/Property			Length		Pro-rata Section Cost (compared to lowest cost option) + 4.7%	Note: Cost estimate is based on pro-rata of Murtle Route cost estimate based on length only
Demolition 25 No			9.1 km			
Proximity		Cumulative totals:	Junctions		Factors With Potential Significant Cost Influence	Note: These factors would increase the above costs
1 0-50m		(1)	2 Grade separated	A93 and A944 priority junctions (Ties in to Kingswells Jcn)	Structures	See cost factors
25 50-100m		(26)			Property	Proximity to properties may result in increased costs
63 100-200m		(89)	Horizontal Alignment			No. of demolitions will result in increased costs
50 200-300m		(139)	No sub-standard elements			
Sensitive Sites		Camphill (<100m) International School (<100m) Albyn School Playing Fields (<500m)	Vertical Alignment			
			No sub-standard elements 6% grade on mainline at A93			
Land Use		Within 20m of Camphill school Severance and loss of parts of Milltimber Community Severance of woodland North of Milltimber (community land) Within 50m of the International School Within 150m of Kippie Lodge (Petroleum Club) Severance of Beanshill Village at Contlaw Rd. Within 500m of Albyn School playing fields	Local Routes			
			17 Side Road Crossings 7 Diverted/Stopped Up			
Landscape		Cuts through 9.25km of high-medium sensitivity. Wooded Farmland for approx. 5.4km; Open Farmland for approx. 0.4km; Hill for approx. 2.6km; and, Valley for approx. 0.7km. Cuts through open valley floor; cuts through valley slope; cuts east of summit of Beanshill; cuts across Ord Burn valley; cuts across Cloghill summit. Poor landscape fit throughout entire route. Visual impacts associated with river and valley crossing at Milltimber and junction on south of river; significant impacts as route crosses higher ground and valleys.	Earthworks			
			Acceptable Cut Bulk Fill Balance	2,642,080 m ³ 2,269,556 m ³ 372,524 m ³ (Surplus)		
				(NB: Northern leg balance is deficit of 1.9m ³)		
Water Quality			Structures		Cost significant factors for structures:	
SAC - High impact		3 watercourses associated with SAC with potential for high impact	5 No of overbridges 4 No of underbridges 3 No of underpasses		1. Skew (> 30°); 2. AWPR Curvature (Straight,Curved); 3. Earthworks (OB>10m, UB>9m); 4. Slip Roads (Y,N); 5. Side Road Realignment (Y,N). 6. Pipeline Structure (Y,N).	
SAC - Medium impact		none	14 Cost significant factors affecting overbridge			
Non SAC - High Impact		3 other watercourses with potential for high impact	9 Cost significant factors affecting underbridge 4 Cost significant factors affecting underpasses			
Ecology		Deeside Railway DWS , route will result in habitat loss, disturbance and fragmentation. River Dee SAC , route will result in habitat loss, increased fragmentation, potential impacts during construction on water quality. Potential to affect integrity of SAC. Milltimber Ancient Woodland , route will result in habitat loss, disturbance and severe fragmentation. Rotten o' Gairn DWS , route will sever DWS from adjacent woodland resulting in habitat loss, disturbance, severe fragmentation. Auchlea Moss, DWS , route will sever DWS, resulting in habitat loss, disturbance and severe fragmentation. West Hatton Woods DWS , route will sever DWS, resulting in habitat loss and severe fragmentation.	Utilities			
			Significant impacts on: 0 Oil Pipelines 0 Natural Gas Pipelines 3 High Voltage O/H Elec 0 High Pressure Gas 3 Fibreoptics 2 Trunk Water Main 2 Scottish Water Aqueduct	Route in fill at 1 crossing Route in cut at 1 crossing Route in cut at 1 crossing Route in cut at 2 crossings		
		Close to or through 3 areas of woodland.				
Cultural Heritage		Direct - Direct impact on 6 sites of Local Importance. Proximity - 29 sites within 250m. 1 of National Importance, 5 of Regional Importance, including 1 Category B Listed Building, 21 of Local Importance, including 1 Category C(s) Listed Building and 2 sites of Unknown Importance.				

	Environmental Issues		Engineering Issues		Economic Issues	
	Issue	Comments	Issue	Comments	Issue	Comments
	Human/Property		Length		Pro-rata Section Cost (compared to lowest cost option) + 19.6%	Note: Cost estimate is based on pro-rata of Murtle Route cost estimate based on length only
	Demolition 21 No		10.4 km			
	Proximity 2 0-50m 28 50-100m 62 100-200m 55 200-300m	Cumulative totals: (2) (30) (92) (147)	Junctions	2 grade separated	Factors With Potential Significant Cost Influence	Note: These factors would increase the above costs
	Sensitive Sites	Camphill (<100m) International School (<100m) Albyn School Playing Fields (<500m)	Horizontal Alignment	1 x1 step below des min (720m radius) 2 x2 steps below des min (510m radii)	Structures	See cost factors
	Land Use	Loss and severance of access to Community Woodlands - Countesswells and Foggieton Woods Within 50m of Camphill school Severance and loss of parts of Milltimber Community Severance of woodland North of Milltimber (community land) Within 50m of the International School Within 150m of Kippie Lodge (Petroleum Club) Within 200m of Albyn School playing fields	Vertical Alignment	No sub-standard elements 6% grade on mainline at A93	Property	Proximity to properties may result in increased costs No. of demolitions will result in increased costs
	Landscape	Cuts through 10.25km of high-medium sensitivity Wooded Farmland for approx. 5.9km; Open Farmland for approx. 0.7km; Hill for approx. 3.0km; and, Valley for approx. 0.8km. Cuts through valley slope; avoids Beanshill and cuts to east of Fiveshill; cuts across Cloghill summit Poor landscape fit between River Dee and Beanshill ; reasonable landscape fit between Beanshill and Cloghill; poor landscape fit across Cloghill to North Kingswells Visual impacts associated with river and valley crossing at Milltimber and junction on south of river; significant visual impact on Kingswells and Cloghill	Local Routes	15 Side Road Crossings 4 Diverted/Stopped Up	Earthworks	Deficit of acceptable material likely to result in increased costs for scheme as a whole
	Water Quality		Earthworks	Acceptable Cut 1,735,177 m ³ Bulk Fill 3,589,979 m ³ Balance - 1,854,802 m ³ (Deficit) (NB: Northern leg balance is deficit of 1.9m ³)		
	SAC - High impact none SAC - Medium impact none Non SAC - High Impact 4 other watercourses with potential for high impact		Structures	9 No of overbridges 2 No of underbridges 2 No of underpasses 21 Cost significant factors affecting overbridge 4 Cost significant factors affecting underbridge 2 Cost significant factors affecting underpasses	Cost significant factors for structures: 1. Skew (> 30°); 2. AWPR Curvature (Straight,Curved); 3. Earthworks (OB>10m, UB>9m); 4. Slip Roads (Y,N); 5. Side Road Realignment (Y,N). 6. Pipeline Structure (Y,N).	
	Ecology	Foggieton Wood DWS , route traverses western edge of wood resulting in habitat loss and severe fragmentation. West Hatton Woods DWS , route crosses woods twice, resulting in habitat loss and severe fragmentation. Close to or through 4 areas of woodland.	Utilities	Significant impacts on: 0 Oil Pipelines 0 Natural Gas Pipelines 3 High Voltage O/H Elec 0 High Pressure Gas 3 Fibreoptics 2 Trunk Water Main 2 Scottish Water Aqueduct		
	Cultural Heritage	Direct - Direct impact on 10 sites of Local Importance. Proximity - 37 sites within 250m. Kingswells Consumption Dyke is a SAM of National Importance. 5 sites are of Regional Importance. 1 of these is a Category B Listed Building. 28 sites are of Local Importance. The importance of 2 sites is Unknown.				