# A7.6 Impacts on Agriculture, Sporting and Forestry Interests

- 1.1.1 This appendix supports Chapter 7 (Land Use) and lists potential impacts on agriculture, sporting and forestry interests to the north of the Firth of Forth (Table 1.1) and south of the Firth of Forth (Table 1.2).
- 1.1.2 Please also refer to Section 7.7 of Chapter 7 with regard to potential land-take implications of ongoing design development.

## Table 1.1: Potential Impacts and Mitigation: North of the Firth of Forth

Land	Field	Description of potential impact		Potential Imp	act	Description of proposed mitigation measures and	Residual	
Interest	Ref		Sensitivity	Magnitude	Significance	comment on likely future viability	Significance	
Castlandhill Farm and Broomhall Estate Land Ref	30/1	Field area 3.76ha. Loss of 0.19ha (0.17ha LCA Class 3.1 land and 0.02ha LCA Class 3.2 land) to realignment of Castlandhill Road (5% of field area). Loss of boundary feature, change in access point and disruption to drainage.	High Negligible		Reinstatement of boundary feature along Castlandhill road. Reinstatement of access from Castlandhill Road. Tie in existing field drainage with road drainage and provide new as required.			
30 and 42	30/2	Woodland and scrub area 3.46ha. Loss of 1.56ha (1.16ha scrub and 0.40ha woodland) to realignment of Castlandhill Road (45% of parcel area). Loss of boundary feature, existing access and disruption to woodland drainage.				Reinstatement of boundary feature. Reinstatement of access from Castlandhill Road. Tie in existing woodland drainage with road drainage and provide new as required. Complete arboriculture assessment pre construction to determine extent of felling required.		
	30/3	Field area 5.47ha. Loss of 3.60ha (66% of field area) of which 3.00ha is LCA Class 2, 0.07 ha LCA Class 3.1 and 0.53ha LCA Class 3.2. Loss of boundary feature, existing access and disruption to field drainage system.					Reinstatement of boundary feature. Reinstatement of access from Castlandhill Road. Tie in existing field drainage with road drainage and provide new as required.	
	42/1	Field area 1.40ha. Loss of 1.06ha (0.96ha LCA Class 3.2 and 0.10ha Scrub) to realignment of Castlandhill Road (76% of field area). Loss of boundary feature, disruption to existing access and disruption to field drainage system.		ligh Negligible	Slight	Reinstatement of boundary feature. Reinstatement of access from Castlandhill Road. Tie in existing field drainage with road drainage and provide new as required.	Slight	
	42/2	Field area 3.09ha. Loss of 0.28ha (9% of field area) of which 0.26ha is LCA Class 3.2 and 0.02ha LCA Class 5.2. Loss of boundary feature and disruption to drainage.				Reinstatement of boundary feature. Tie in existing field drainage with road drainage and provide new as required.		
	N/A	Summary for Castlandhill Farm and Broomhall <u>Estate</u> Loss of 6.69ha in total of which 3.00ha LCA Class 2, 0.24ha LCA Class 3.1, 1.77ha LCA Class 3.2, 0.02ha LCA Class 5.2, 1.26ha Scrub and 0.40ha woodland. 5 fields affected. Land lost equates to 1% of total farmed area. Loss of boundary features, field access and disruption to field drainage system.				Summary for Castlandhill Farm and Broomhall Access provided from Castlandhill Road. Estate Reinstatement of boundary features and provision of new access to fields. Reinstatement of field drainage. Arboricultural assessment pre-construction to determine extent of woodland felling. The farm stands to lose only a small proportion of the farmed area. Consequently it is assessed that the likely future viability of the unit will not be compromised by the proposed scheme.		

### Table 1.2: Potential Impacts and Mitigation: South of the Firth of Forth

Land	Field	Description of potential impact		Potential Imp	act	Description of proposed mitigation measures and	Residual
Interest	Ref		Sensitivity	Magnitude	Significance	comment on likely future viability	Significance
Dundas Estate Land Ref 1, 6, 9 and 23	1/1	Field area 8.60ha. Loss of whole field area (6.75ha LCA Class 2 and 1.85ha LCA Class 3.1) to main alignment and main crossing viaduct.	High	High	Substantial	Potential to return 2.60ha (2.46ha LCA Class 2 and 0.14 ha LCA Class 3.1) to agriculture reducing permanent loss to 6.00ha. Reinstatement of boundary feature. Reinstatement of access from A904. Provision of water trough for grazing animals. Tie in existing field drainage with road drainage and provide new as required.	Moderate/ Substantial
	1/2	Field area 10.38ha. Loss of whole field area (9.26ha LCA Class 2 and 1.12ha LCA Class 3.1) to main alignment.				Potential to return 5.33ha (4.67ha LCA Class 2 land and 0.66 ha LCA class 3.1) to agriculture reducing permanent loss to 5.05 ha. Merge with field 1/3. Reinstatement of boundary feature. Reinstatement of access from A904. Provision of water trough for grazing animals. Tie in existing field drainage with road drainage and provide new as required.	
	1/3	Field area 5.15ha. Loss of whole field area (4.41ha LCA Class 2 and 0.74ha LCA Class 3.1) to main alignment.				Potential to return 0.27ha of LCA Class 2 to agriculture reducing permanent loss to 4.88ha. Merge with field 1/2. Reinstatement of boundary feature. Reinstatement of access from A904. Provision of water trough for grazing animals. Tie in existing field drainage with road drainage and provide new as required.	
	6/1	Field area 3.14ha. Loss of 0.01ha of LCA Class 2 land (less than 1% of field area) to main alignment. Disruption to drainage.				Provision of boundary feature. Tie in existing field drainage with road drainage and provide new as required.	
	6/2	Field area 3.97ha. Loss of 0.29ha (0.24ha LCA Class 2 and 0.05ha LCA Class 3.1 land lost) to main alignment and Queensferry junction (7% of field area). Disruption to access and field drainage.				Provision of boundary feature. Reinstatement of access via realigned A904. Tie in existing field drainage with road drainage and provide new as required.	
	6/3	Field area 11.74ha. Loss of 0.17ha LCA Class 3.1 land (1% of field area) to realignment of A904. Loss of boundary feature, disruption to existing access and disruption to drainage.				Reinstatement of boundary feature. Reinstatement of access via realigned A904. Tie in existing field drainage with road drainage and provide new as required.	
	6/4	Field area 12.15ha. Loss of 1.01ha of LCA Class 3.1 land (8% of field area) to realignment of A904 and Builyeon Road (U221). Loss of boundary feature, access and disruption to drainage.				Merge with western severed area of 6/5. Reinstatement of boundary feature. Reinstatement of access from realigned A904 and Builyeon Road (U221). Tie in existing field drainage with road drainage and provide new as required.	

Land	Field	Description of potential impact		Potential Imp	act	Description of proposed mitigation measures and	Residual
Interest	Ref		Sensitivity	Magnitude	Significance	comment on likely future viability	Significance
	6/5	Field area 11.74ha. Loss of 6.49ha of LCA Class 3.1 land (55% of field area) to main alignment and Queensferry junction. Field severed into four parcels. Loss of boundary features, access and disruption to drainage.				Merge severed western area with 6/4. Merge severed eastern area with 6/6. Reinstatement of boundary features. Provision of new access from A904 and Builyeon Road (U221). Tie in existing field drainage with road drainage and provide new as required.	
	6/6	Field area 12.95ha. Loss of 4.92ha of LCA Class 3.1 land (38% of field area) to main alignment and Queensferry junction. Field severed into two parcels. Loss of boundary feature, existing access and disruption to drainage.				Merge northern severed area with eastern severed area of field 6/5. Reinstatement of boundary features. Reinstatement of access from A904 and from field 6/7. Tie in existing field drainage with road drainage and provide new as required.	
	6/7	Field area 13.76ha. Loss of 1.87ha of LCA Class 3.1 land (14% of field area) to main alignment. Loss of boundary feature and disruption to drainage.				Reinstatement of boundary features. Tie in existing field drainage with road drainage and provide new as required.	
	6/8	Field area 8.50ha. Loss of 0.92ha of LCA Class 3.1 land (11% of field area) to main alignment. Loss of boundary feature and disruption to drainage.				Reinstatement of boundary features. Tie in existing field drainage with road drainage and provide new as required.	
	9/1	Parcel area 8.31ha. Woodland. Loss of 2.22ha (27% of woodland). Loss of boundary feature and disruption to woodland drainage system. Access to woodland would be required for bat mitigation as shown on Figure 12.4.				Reinstatement of boundary feature. Tie in existing woodland drainage with road drainage and provide new as required. Arboriculture assessment completed pre construction to determine extent of woodland felling.	
	23/1	Field area 16.59ha. Loss of 0.65ha (4% of field area) of LCA Class 3.1. Loss of boundary feature, disruption to existing access and disruption to drainage.				Reinstatement of boundary features. Tie in existing field drainage with road drainage and provide new as required.	
	23/2	Woodland area 17.11ha. Loss of 0.15ha (1% of woodland area). Loss of boundary feature, disruption to existing access and disruption to drainage.				Reinstatement of boundary features. Tie in existing woodland drainage with road drainage and provide new as required.	
	23/3	Field area 14.16ha. Loss of 0.01ha (less than 1% of field area) of LCA Class 3.1 land. Disruption to boundary feature and drainage.				Reinstatement of boundary feature. Tie in existing field drainage with road drainage and provide new as required.	

Land	Field	Description of potential impact	Potential Impact			Description of proposed mitigation measures and	Residual						
Interest	Ref		Sensitivity	Magnitude	Significance	comment on likely future viability	Significance						
	N/A	Summary for Dundas Estate Loss of 42.84ha of which 20.67ha LCA Class 2, 19.80ha Class 3.1 and 2.37ha woodland. 15 fields affected. 24.39ha land severed equating to 15% of the farmed area. Land lost equates to 9% of total farmed area. Loss of boundary features, field access and disruption to field drainage system.				Summary for Dundas Estate Potential to return 8.20ha to agricultural and woodland use limiting permanent land loss to 34.64ha. Of the land returned, 7.40ha is LCA Class 2 and 0.80ha is class 3.1. Access provided from A904 and Builyeon Road (U221). Reinstatement of boundary features and provision of new access to fields. Reinstatement of field drainage. Provision of arboriculture assessment of affected woodland areas to determine extent of woodland felling. Although a significant proportion of the land farmed will be lost to the proposed scheme the remaining land will continue to support a viable agricultural unit. The farm will be able to continue to operate with the road in situ although travelling time to some fields will be increased. Consequently it is assessed that the farms likely future viability will not be compromised by the proposed scheme.							
Dundas Mains Land Ref 3 and 22	3/1	Field area 6.04ha. Loss of 0.06ha (1% of field area) of LCA Class 3.1 land to realignment of Builyeon Road. Loss of boundary feature and disruption to drainage.	High	High	Substantial	Reinstatement of boundary feature. Tie in existing field drainage with road drainage and provide new as required.	Substantial						
	3/2	Field area 2.17ha. LCA Class 3.1. Loss of whole field area.				No mitigation possible.	_						
	3/3	Field area 7.84ha. Loss of 0.66ha (8% of field area) of LCA Class 3.2 land. Loss of boundary feature and disruption to drainage.	-									Reinstatement of boundary feature. Tie in existing field drainage with road drainage and provide new as required.	
	3/4	Field area 10.27ha. Loss of 4.56ha (44% of field area) of LCA Class 3.1 land to main alignment. Loss of boundary feature and disruption to drainage.				Reinstatement of boundary feature. Tie in existing field drainage with road drainage and provide new as required.							
	3/5	Field area 14.67ha. Loss of 6.72ha (46% of field area) of LCA Class 3.1 land to main alignment. 5.18ha of land severed. Loss of boundary feature, existing access, and disruption to drainage.				Provision of access to severed northern area from A904. Reinstatement of boundary features. Tie in existing field drainage with road drainage and provide new as required.							

Land	Field	Description of potential impact		Potential Imp	act	Description of proposed mitigation measures and	Residual
Interest	Ref		Sensitivity	Magnitude	Significance	comment on likely future viability	Significance
	3/6	Woodland area 1.69ha. Loss of 1.25ha (86% of woodland area) to main alignment. Loss of boundary feature and disruption to drainage. Access to woodland would be required for bat mitigation as shown on Figure 12.4.				Reinstatement of boundary feature. Tie in existing woodland drainage with road drainage and provide new as required. Arboriculture assessment pre construction to identify the extent of woodland felling.	
	3/7	Field area 2.81ha. Loss of whole field (LCA Class 3.1) to realignment of A8000 and public transport link.				No mitigation possible.	
	22/1	Field area 1.32ha. Loss of 0.12ha (9% of field area) of LCA Class 3.1 land to main alignment. Loss of boundary feature, disruption to existing access and disruption to drainage.				Reinstatement of boundary feature. Reinstatement of access from A904. Tie in existing field drainage with road drainage and provide new as required.	
	N/A	Summary for Dundas Mains Loss of 18.35ha of which 16.44ha is LCA Class 3.1, 0.72ha is LCA Class 3.2 land and 1.25ha is woodland. 8 fields affected. Land lost equates to 32% of total farmed area. 5.18 ha of land severed by main alignment equating to 11% of farm area. Loss of boundary features, field access and disruption to field drainage system.				Summary for Dundas Mains Access to severed land provided from A904. Reinstatement of boundary features and provision of new access to fields. Reinstatement of field drainage. Provision of arboriculture assessment of affected woodland areas to determine extent of woodland felling. The unit stands to lose a significant proportion of the farm area and this will significantly compromise the financial	-
						viability of the farming unit. Land will be severed by the main alignment and increased travelling time to fields will result. Due to the extent of the land lost, it is assessed that the likely future viability of the farming unit will be significantly compromised by the proposed scheme.	
Rosebery Estate Land Ref 44	44/1	Field area 10.47ha. Loss of 0.46ha (4% of field area) of LCA Class 3.1 to public transport link. Loss of boundary feature, disruption to existing access and disruption to drainage.	High	Negligible	Slight	Reinstatement of boundary feature. Reinstatement of field access. Tie in existing field drainage with road drainage and provide new as required.	Slight
	44/2	Field area 1.59ha. Loss of 1.52ha (1.44ha LCA Class 3.2 and 0.08ha woodland) to A90 bus link (96% of field area). Loss of boundary feature, disruption to existing access and disruption to drainage.				Reinstatement of boundary feature. Reinstatement of field access. Tie in existing field drainage with road drainage and provide new as required.	
	44/3	Woodland area 0.29ha. Loss of 0.10ha (34% of field area) to public transport link. Loss of boundary feature, disruption to existing access and disruption to drainage.				Reinstatement of boundary feature. Reinstatement of woodland access. Tie in existing drainage with road drainage and provide new as required. Arboricultural assessment pre construction to determine extent of woodland felling required.	



Land Interest	Field	Description of potential impact		Potential Imp	act	Description of proposed mitigation measures and	Residual
	Ref		Sensitivity	Magnitude	Significance	comment on likely future viability	Significance
	44/4	Field area 4.45ha. Loss of 1.21ha (27% of field area) of LCA Class 3.1 land to public transport link. Loss of boundary feature, disruption to existing access, and disruption to drainage.				Reinstatement of boundary feature. Reinstatement of field access. Tie in existing field drainage with road drainage and provide new as required.	
	44/5	Field area 14.46ha. Loss of 2.83ha (20% of field area) of LCA Class 3.1 land to public transport link. Loss of boundary feature and disruption to drainage.				Reinstatement of boundary feature. Tie in existing field drainage with road drainage and provide new as required. Arboricultural assessment pre construction to determine extent of woodland felling required.	
	44/6	Woodland area 2.20ha. Loss of 0.14ha (6% of woodland area) to public transport link. Loss of boundary feature and disruption to drainage.				Reinstatement of boundary feature. Tie in existing woodland drainage with road drainage and provide new as required. Arboricultural assessment pre construction to determine extent of woodland felling required.	
		Summary for Rosebery Estate				Summary for Rosebery Estate	
		Loss of 6.26ha of which 4.50ha is LCA Class 3.1 land, 1.44ha LCA Class 2 and 0.32ha woodland over 6 fields. Land lost equates to less than 1% of total farmed area. Loss of				Reinstatement of boundary features and provision of new access to fields. Reinstatement of field drainage. Arboricultural assessment pre-construction to determine extent of woodland felling.	
		boundary features, field access and disruption to field drainage system.				The farm stands to lose only a small proportion of the farmed area. Consequently it is assessed that the likely future viability of the unit will not be compromised by the proposed scheme.	
Humbie Farm Land Ref 7	7/1	Field area 10.72ha. Loss of 0.99ha (9% of field area) of LCA Class 3.1 land to M9 Junction 1A. Loss of boundary feature, existing access and disruption to drainage.	High	Medium	Moderate/ Substantial	Reinstatement of boundary feature. Reinstatement of access from the B9080. Tie in existing field drainage with road drainage and provide new as required.	Slight/ Moderate
	7/2	Field area 10.12ha. Loss of 8.45ha (83% of field area) of LCA Class 3.1 land to M9 Junction 1A and associated structures. Loss of boundary feature, existing access, watering for livestock and disruption to drainage.				Potential to return 3.34ha of LCA Class 3.1 land to agriculture limiting the land permanently lost to the scheme to 5.11ha. Reinstatement of boundary feature. Reinstatement of access. Tie in existing field drainage with road drainage and provide new as required.	
	7/3	Field area 18.87ha. Loss of 0.41ha (2% of field area) of LCA Class 3.1 land. Loss of boundary feature, existing access and disruption to drainage.				Reinstatement of boundary feature. Reinstatement of access from adjacent track. Tie in existing field drainage with road drainage and provide new as required.	
	7/4	Field area 0.48ha. Woodland. Access required for bat mitigation as shown on Figure 12.4.				No mitigation proposed.	
	7/5	Field area 0.28ha. Woodland. Access required for bat mitigation as shown on Figure 12.4.				No mitigation proposed.	

Land	Field	Description of potential impact		Potential Impa	act	Description of proposed mitigation measures and	Residual
Interest	Ref		Sensitivity	Magnitude	Significance	comment on likely future viability	Significance
		Summary for Humbie Farm Loss of 9.85ha of LCA Class 3.1 land over 3 fields. Land lost equates to 5% of total farmed area. Loss of boundary features, field access and disruption to field drainage system.				Summary for Humbie Farm Potential to return 3.34ha of LCA Class 3.1 agricultural land. This reduces the land take to 6.51ha of Class 3.1 land. Reinstatement of field access and boundary features. Reinstatement of field drainage. The farm stands to lose only a small proportion of the farmed area. Consequently it is assessed that the likely future viability of the unit will not be compromised by the proposed scheme.	
Overton Grazing Land Ref 15	15/1	Field area 1.05ha. Loss of 0.23ha (22% of field area) of LCA Class 3.1 land to M9 Junction 1A. Loss of boundary feature and disruption to field drainage.				Potential to return 0.10ha to agricultural use limiting land take to 0.13ha. Reinstatement of boundary feature, tie in existing field drainage with road drainage and provide new as required.	
	15/2	Field area 0.45ha. Loss of 0.30ha (67% of field area) of LCA Class 3.1 land to main alignment. Loss of boundary feature and disruption to drainage.				Potential to return 0.10ha to agricultural use limiting land take to 0.20ha. Reinstatement of boundary feature, tie in existing field drainage with road drainage and provide new as required.	
	N/A	Summary for Overton Grazing Loss of 0.53ha of Class 3.1 land. Two fields affected. Land lost equates to 35% of total farmed area. Loss of boundary features and disruption to field drainage system.	High	High	Substantial	Summary for Overton Grazing Potential to return 0.20ha to agricultural use limiting permanent land loss to 0.33ha (18% of the farmed area). Reinstatement of boundary features and field drainage. The farm will lose a significant proportion of the agricultural land available. It is not considered to be a commercial farm and as such it is not appropriate to consider farm viability. However, the unit will be able to continue to operate as an agricultural unit, albeit on a reduced scale.	Substantial
Newliston Estate Land Ref 16 and 11	16/1	Field area 12.57ha. Loss of 1.38ha (11% of field area) of LCA Class 3.1 land to M9 Junction 1A. Loss of boundary feature, existing access and disruption to drainage.	High	Low	Slight/ Moderate	Reinstatement of boundary feature. Reinstatement of access from access track. Tie in existing field drainage with road drainage and provide new as required.	Slight/Moderat e
	11/1	Field area 8.98ha. Loss of 4.93ha (55% of field area) of LCA Class 3.1 land to M9 Junction 1A. Loss of boundary feature and disruption to drainage.				Potential to return to agriculture 0.79ha reducing the permanent land loss to 4.14ha. Reinstatement of boundary feature. Tie in existing field drainage with road drainage and provide new as required.	

Land	Field	Description of potential impact		Potential Imp	act	Description of proposed mitigation measures and	Residual
Interest	Ref		Sensitivity	Magnitude	Significance	comment on likely future viability	Significance
	11/2	Woodland area 11.37ha. Loss of 0.56ha (5% of field area) to main alignment. Loss of boundary feature and disruption to drainage Access to woodland would be required for bat mitigation as shown on Figure 12.4.				Arboricultural assessment pre construction to identify extent of felling required. Reinstatement of boundary feature. Tie in existing woodland drainage with road drainage and provide new as required.	
	11/3	Field area 3.68ha. Loss of 1.25ha (0.43ha LCA Class 2 and 0.82 ha Class 3.2) to M9 Junction 1A (34% of field area). Loss of boundary feature, disruption to existing access and disruption to drainage.				Reinstatement of boundary feature. Reinstatement of access from SUDS pond access track. Tie in existing field drainage with road drainage and provide new as required.	
	11/4	Field area 15.85ha. Loss of 0.03ha (less than 1% of field area) of LCA Class 2 land. Loss of boundary feature, disruption to existing access and disruption to drainage.				Reinstatement of boundary feature. Reinstatement of access from track. Tie in existing field drainage with road drainage and provide new as required.	
	11/5	Field area 3.52ha. Loss of 0.56ha (16% of field area) of LCA Class 2 land to main alignment. Loss of boundary feature, disruption to existing access and disruption to drainage.				Reinstatement of boundary feature. Reinstatement of access from track. Tie in existing field drainage with road drainage and provide new as required.	
	11/6	Field area 9.81ha. Loss of 2.41ha (25% of field area) of LCA Class 2 land to main alignment. Loss of boundary feature, disruption to existing access and disruption to drainage.				Reinstatement of boundary feature. Reinstatement of access from track. Tie in existing field drainage with road drainage and provide new as required.	
	11/7	Field area 2.00ha. Loss of 0.73ha (36% of field area) of LCA Class 3.2 land to road infrastructure. Loss of boundary feature and disruption to drainage.				Reinstatement of boundary feature. Tie in existing field drainage with road drainage and provide new as required.	-
	11/8	Field area 4.68ha. Loss of 0.53ha (0.08ha LCA Class 2 and 0.45ha LCA Class 3.2 land) to road infrastructure (11% of field area). Loss of boundary feature and disruption to drainage.				Reinstatement of boundary feature. Tie in existing field drainage with road drainage and provide new as required.	
	11/9	Field area 3.62ha. Loss of 0.12ha (3% of field area) of LCA Class 3.1 land to road infrastructure. Loss of boundary feature and disruption to drainage.				Reinstatement of boundary feature. Tie in existing field drainage with road drainage and provide new as required.	



Land	Field	Description of potential impact		Potential Impac	ct	Description of proposed mitigation measures and	Residual
Interest	Ref		Sensitivity	Magnitude	Significance	comment on likely future viability	Significance
		Summary for Newliston Estate Loss of 12.50ha of which 3.51ha is LCA Class 2, 6.43ha Class 3.1, 2.00ha Class 3.2 and 0.56ha woodland. 10 fields affected. Land lost equates to 3% of total farmed area. Loss of boundary features, field access and disruption to field drainage system.				Summary for Newliston Estate Potential to return 0.79ha Class 3.1 land to agricultural use, limiting land take to 11.73ha. Provision of new access arrangements where required. Reinstatement of boundary features and field drainage. Arboriculture assessment of affected woodland pre construction to determine the extent of felling required. The farm stands to lose only a small proportion of the farmed area. Consequently it is assessed that the likely future viability of the unit will not be compromised by the proposed scheme.	