DUMFRIES & GALLOWAY SHORELINE MANAGEMENT PLAN

Appendix B – Defence Assessment

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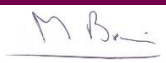
Malcolm Brian  22 December 2022

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1 INTRODUCTION

Appendix A presents information that informs the making of sustainable decisions on the future management of the coast over the next 100 years as by establishing the present and future coastal processes you can ensure that the preferred policies are technically sound and sustainable in terms of these processes. Thus, the baseline scenario assessments underpin the whole Dumfries & Galloway Shoreline Management Plan (SMP) review and were used to identify risks and evaluate the response and implications of different management policy scenarios over different timescales, up to 100 years. Appendix B further adds to the assessment of likely coastal change by establishing the condition of coastal structures that affect the coastal flood and erosion risk or at least those that have been identified on previous Dumfries & Galloway coastal structure datasets. By knowing the condition of defences, it is possible to assesses their residual usefulness and hence infer how their performance will evolve in the future. However, it should be noted that decisions reached in the SMP process or the inclusion of structures in any dataset does not place any obligation on Dumfries & Galloway Council, government, or any organisation to fund measures, as coastal flood and erosion risk management is a permissive activity and not a statutory obligation.

B1.1 Coastal Defence Assessment

To fully assess future policy options, it is imperative to understand the spatial distribution and condition of existing coastal defences assets along the Dumfries & Galloway shoreline. Coastal defences are emplaced to prevent flooding, control erosion or mitigate a combination of both. Often the presence of coastal defence structures can influence the natural sediment transport, reducing the ability of the shoreline to respond to natural forcing factors and fragmenting the coastal space. Coastal defences often protect a section of coastline but can contribute to detrimental impacts such as accelerated beach lowering in front of the defences, or exacerbated problems on adjacent stretches of coastline. The presence of coastal defences can also result in coastal squeeze, whereby the beach width is progressively reduced over time due to the inability of the natural coastline to retreat landwards in response to changing environmental conditions.

There are several coastal structures located along the Dumfries & Galloway shoreline. The majority are linear hard structure such as seawalls or revetments of varying age. For this SMP update the structures assessed also include those that protect tidally influenced river channels such as the River Nith (Dumfries). In general, along the Dumfries & Galloway coastline, structures tend to be small and localised. The largest continuous section of coastal structures is located along the seaward edge of the A716 at Kilstay Bay.

The condition of existing coastal structures known to Dumfries & Galloway Council was visually accessed by RAB Consultants, in line with the Environment Agency's Condition Assessment Manual and associated guidance, the FCRM Asset Templates: Guidance on Element Weightings (Environment Agency, 2013a). While it is recognised that T98 methods and accreditation is not required in Scotland, the use of RAB Consultants and the T98 methods ensured that the inspections were robust and captured all necessary information.

The Dumfries & Galloway coastal assets have been given a condition grade rating of one to five based on the EA guidance, as listed in Table B1-1. Overall asset condition is typically assessed by inspection of the various sub-elements of the asset and consideration of the relationship between the elements that affect asset performance.

Grade	Description of condition	Extent of defects
1	Very good	Cosmetic defects that will have no effect on performance.
2	Good	Minor defects that will not reduce overall performance of asset.
3	Fair	Defects that could reduce performance of asset.
4	Poor	Defects that would significantly reduce performance of asset.
5	Very Poor	Severe defects resulting in complete performance failure.

Source: Condition Assessment Manual, Environment Agency, 2006

Table B1-1 Defence Condition Grades

For the condition assessment the Environment Agency (2009) guide (SCHO0509BQAT-E-P) was followed. Asset deterioration curves were subsequently consulted to establish the residual life of the different types of defence assets. These deterioration curves consider the type of environment (fluvial or coastal), type of material, width of the asset, whether maintenance is carried out and whether there is rear protection. The deterioration curves quantify the residual life of some type of assets for different condition grades with and without maintenance, allowing the user to evaluate their deterioration over time (years). The time (in years) to move between different condition grades is obtained from the difference between figures corresponding to those conditions' grades.

The Defence Assessment provides a summary of the condition of existing structures along the Dumfries & Galloway frontage. Table B1-2 provides a summary of asset condition, performance, ownership and impacts on the adjacent coastal processes and coastline. The Defence Assessment was used to inform the baseline scenario assessments and provided an understanding of how defences and management practices may have affected coastal behaviour in the past, at present and in the future.

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
7	CPU 1	1	Redkirk	Redkirk Point	Revetment	Rock	-	Private	Long-term potential for loss of intertidal area with increasing sea level.
		2	Bhouse001	Browhouses	Wall	Masonry	3	Private	Long-term potential for loss of intertidal area with increasing sea level. Long-term potential for coastal squeeze, affecting the salt marsh habitats.
			Dornockbrow	Dornockbrow	Wall	Unknown	-	Private	
		3	Annan003	Battlehill	Wall	Rock / Timber	4	Private	The presence of hard coastal defence interferes with the morphodynamics and result in the scouring of adjacent unprotected unconsolidated shoreline.
			Annan002						
		4	Newb001	Newbie Mains (West)	Promenade	Masonry	3	Private	Scouring of unprotected shoreline, potential to exacerbate beach lowering, loss of coastal access route to farm.
			Newb002	Newbie Mains (East)	Revetment	Concrete	3	Private	
			Newb003	Newbie Barns (East)	Rock armour	Concrete / Rock	3	Private	Long term potential for loss of intertidal area with increasing sea level. Scouring of adjacent, unprotected unconsolidated shoreline.
			Newb004	Newbie Barns (West)	Rock armour	Rock	3	Private	
			Newb005	Newbie North	Embankment	Tarmac	3	Council (Roads)	Prohibits the natural development of a meander.
			Pow001	Powfoot West	Wall	Masonry	3	Council (Roads)	Long term potential for loss of intertidal area with increasing sea level.

APPENDIX B – DEFENCE ASSESSMENT

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
7	CPU 1	4	Pow002		Wall	Rock	3	Council (Roads)	Long term potential for loss of intertidal area with increasing sea level.
			Pow003		Wall	Brick	4	Council (Roads)	Amenity Wall? Unlikely to have been constructed for defence purposes.
			Pow004		Promenade	Earth	4	Private	Long term potential for loss of intertidal area with increasing sea level.
			Pow005	Powfoot Village	Promenade	Rock	3	Council (Roads)	Long term potential for loss of intertidal area with increasing sea level.
			Pow006		Promenade	Rock	4	Council (Roads)	Long term potential for loss of intertidal area with increasing sea level.
			Wfoot001	Waterfoot	Embankment	Turf	5		Prevents expansion of intertidal habitats, including Saltmarsh.
		6	Glen001	Glencaple Harbour	Promenade	Masonry	3	Private	Tidally affected channel of the River Nith flows past this area. Shoreline is influenced by combination of fluvial / estuary processes. Highly reflective defence structures, potentially result in the deepening / scouring of the channel at this location.
			Glen002	Glencaple	Embankment	Earth	3	Council (Roads)	Prevents retreat of the shoreline, potential for long-

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
7	CPU 1	6	Glen003		Embankment	Concrete	3	Council (Roads)	term coastal squeeze and loss of Saltmarsh habitat.
			Dumf001	Dumfries (North-East)	Promenade	Concrete	4	Council (Roads)	Preventing the natural development of a river meander and cuts off natural flood plain. Protects Dumfries from river and coastal flooding and erosion of the banks.
			Dumf002		High Ground	Concrete	3	Council (Roads)	
			Dumf003		Wall	Masonry	3	Council (Roads)	
			Dumf004		High Ground	Masonry	4	Council (Roads)	
			Dumf005		Wall	Masonry	4	Council (Roads)	
			Dumf006		Wall	Masonry	4	Council (Roads)	
			Dumf007		Wall	Concrete	2	Council (Roads)	
			Dumf008	Dumfries East (1) & (2)	Embankment	Rock	4	Council (Roads)	
			Dumf009		Wall	Earth	2	Council (Roads)	
			Dumf010	Dumfries West Bank (1)	Wall	Concrete	3	Council (Roads)	
			Dumf011		Wall	Masonry	3	Council (Roads)	
			Dumf012		Wall	Masonry	3	Council (Roads)	
			Dumf013	Dumfries Dockhead	Promenade	Brick	2	Council (Roads)	
			Dumf014	White Sands	Wall	Masonry	2	Council (Roads)	
			Dumf015		High Ground	Earth / Masonry	4	Council (Roads)	
			Dumf016	Dumfries Old Bridge	Wall	Masonry	3	Council (Roads)	
			Dumf017		Promenade	Concrete	3	Council (Roads)	
			Dumf018		Wall	Concrete	3	Council (Roads)	
			Dumf019	Dumfries Mill Road (Dumf019 to 022)	Promenade	Masonry	4	Council (Roads)	
			Dumf020		Wall	Masonry	3	Council (Roads)	

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
7	CPU 1	6	Dumf021		Wall	Masonry	4	Council (Roads)	
			Dumf022		Promenade	Concrete	3	Council (Roads)	
			Dumf023	Mill Green End	Promenade	Earth	3	Council (Roads)	
			Dumf024		Promenade	Masonry	3	Council (Roads)	
		7	Cars006	Carsethorn North-East	Rock armour	Rock	3	Private	Long term potential for loss of intertidal area with increasing sea level. These highly reflective structures exacerbate beach lowering. Potential for wave-overtopping is increased.
			Cars005	Carsethorn East	Wall	concrete	4	Council (Roads)	
			Cars004		Groyne	Wood	3	Council (Roads)	Groynes have acted to maintain beach levels.
			Cars003		Groyne	Wood	3	Council (Roads)	
			Cars002		Groyne	Wood	5	Council (Roads)	This groyne has little impact on beach processes due to its deteriorated state.
			Cars001		Groyne	Wood	4	Council (Roads)	Groynes installed to maintain beach levels.
			Cars000	Carsethorn South-East	Rock Armour	Rock	3	Council (Roads)	Reflective structure may exacerbate beach erosion.
			South001	Southerness	Rock Armour	Rock	3	Private	Beach profile steepening, beach loss increased exposure of rock platform. Scouring of adjacent shoreline. Potential for wave-overtopping is increased.
	CPU 2	8	PWARREN	Port Warren	Wall	Masonry	2	Private	None identified, wall set beyond reach of normal wave run-up.

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
7	CPU 2	8	Portling Bay	Portling Bay	Wall	-	-	Private	Scouring of adjacent shoreline, leaving an increased offset.
			Southerness Golf Course	Southerness Point	Embankment	-	-	Private	Scouring of adjacent shoreline, leaving an increased offset.
		9	Rock001	Rockcliffe South	Embankment	Concrete	3	Council (Roads)	None identified.
			Rock002	Rockcliffe North		Earth / rock	4	Council (Roads)	Potential sediment source to this small pocket beach is cut off. Reflective structure may exacerbate beach erosion.
			Kipp001	Kippford South	Embankment	Concrete	4	Private	Reflective structure may exacerbate beach erosion.
			Kipp002	Kippford North	Wall	Masonry	2	Council (Roads)	Beach profile steepening, limiting natural meander development.
			Pan001	Palnackie Quay	Quay	Concrete	4	Private	Sediment entrapment / Siltation.
		10	Auch001	Balcary Bay	Wall	Masonry	4	Private	Reflective structure may exacerbate beach erosion. Potential sediment source to this small pocket beach is cut off.
			Auch002	Shore Road	Wall	Masonry	4	Council (Roads)	Build-up of gravel along the toe of this structure, indicates the reflective nature of this structure. A series of deteriorated groynes indicate former

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
		10	Auch002	Shore Road	Wall	Masonry	4	Council (Roads)	attempts to retain finer sediment. These have little impact on intertidal processes. This embayment is sheltered, although the combination of high tide and onshore winds may increase the susceptibility to localised wave attack.
7	CPU 2	12	Kirk001	Mill Hall	Embankment	Earth	4	Private	Reflective structure may exacerbate beach erosion. Potential sediment source to this small pocket beach is cut off.
			Kirk002		Wall	Masonry	3	Private	
			Kirk003		Embankment	Earth	4	Private	
			Kirk004	Shoulder O'Craig	Wall	Masonry / Rock	3	Council (Roads)	Gravel dominated, sheltered pocket beach, limited impact likely. Rock outcrops act as a natural breakwater.
			Kirk005		Wall	Masonry Rock	4	Council (Roads)	
			Kirk006	Seaward Road	Wall	Masonry	2	Council (Roads)	Narrowing of Intertidal area and exposure of courser material. Structures positioned landwards of natural outcrops that act as a breakwater.
			Kirk007		Wall	Masonry	2	Council (Roads)	
			Kirk009	Mutehill	Embankment	Earth	4	Private	Reflective nature of defences may have exacerbated the erosion of
			Kirk010		Embankment	Earth	3	Private	

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
7	CPU 2	12	Kirk011		Embankment	Earth	4	Private	saltmarsh habitat located along the intertidal zone. Coastal squeeze will result in a narrowing of the intertidal zone.
			Kirk012	Mutehill Bridge	Embankment	Earth	3	Council (Roads)	Reflective nature of defences may have exacerbated the erosion of saltmarsh habitat located along the intertidal zone. Coastal squeeze will result in a narrowing of the intertidal zone.
			Kirk013		Embankment	Earth	3	Council (Roads)	
			Brig002	Brighouse	Promenade	Concrete	3	Private	Structure emplaced upon solid rock outcrop.
			Brig003		Promenade	Rock	5	Private	Collapse of this structure is imminent.
			Brig004		Wall	Rock	3	Private	Structure emplaced upon solid rock outcrop.
			Brig005		Wall	Masonry	4	Private	Structure emplaced upon solid rock outcrop.
			Skyreburn Bay		Embankment	-			
			Skyreburn Bay		Embankment				
			Sandgreen		Wall				
			Ross Bay		No information				

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
7	CPU 2	12	Grange		Wall				
		13	Kirk008	Kirkcudbright	Quay	Masonry	3	Private	Natural meander development is cut-off and the SSE landward development is prevented.
			Janefield001		Embankment	Earth	3	Council	Embankment part of land reclamation, illustrated in 1894 OS maps. Its presence has resulted in the spatial reduction of saltmarsh habitat at this location. The continuation of coastal squeeze may result in the loss of saltmarsh due to sea-level rise.
			Castle Dykes	Castle Dykes	Wall	-	-	Unknown	The continuation of coastal squeeze may result in the loss of saltmarsh due to sea-level rise.
	CPU 3	15	Cass001	Carsluith Frontage	Promenade	Rock	4	Council	Structure cuts off cliff erosion and a potential sediment source. Reflective nature of these defences and coastal squeeze against the defences will result in the narrowing of the intertidal zone and reduction in saltmarsh habitat.
			Cass002		Promenade	Rock	2	Council	

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
7	CPU 3	15	Wig001	Wigtown Harbour	Quay	wood / masonry	4	Private	Siltation of sediment (fines).
				Creetown_A75	Embankment			Unknown	Reflective nature of these defences and coastal squeeze against the defences will result in the narrowing of the intertidal zone and reduction in saltmarsh habitat.
		16	Gair001	Garlieston Quayside	Promenade	Concrete	4	Council	Structure has resulted in the accumulation of sediment to the east of the quay.
			Gair002		Quay	Concrete / masonry	4	Council	Beach incised by the Pouton and Inch Burns that flow into Rigg Bay.
			Gair003	Garlieston South-east	Wall	Masonry	3	Council (Roads)	Fronted by a healthy beach, waves rarely reach walls.
			Gair004		Wall	Masonry	3	Council (Roads)	
			Gair005	Garlieston South-Crescent	Wall	Masonry	3	Private	
			Gair006		Wall	Masonry	3	Council (Roads)	
			Gair007		Wall	Concrete	4	Council (Roads)	
			Gair008	Garlieston Shore Road	Wall	Masonry	3	Council (Roads)	
		17	Whit006	Portyerrock	Wall	Concrete	3	Council (Roads)	Defence fronted by grassy promenade and strandline located seawards of this. Gravel beach indicates the natural reflective nature of this pocket beach. No issues identified.

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
7	CPU 3	18	Whit001	Main Street (West)	Wall	Masonry	3	Council (Roads)	Beach steepening, increased wave overtopping.
		18	Whit002	Main Street (East)	Wall	Masonry	3	Council (Roads)	
			Whit003		Wall	Concrete	3	Council (Roads)	
			Whit004	Harbour Row	Quay	Concrete	4	Council	
			Whit005	Isle of Whithorn Harbour	Wall	Masonry	4	Council	
7	CPU 4	20	Pwilll001	A747 Port William North	Promenade	Earth	3	Council (Roads)	Structures may interrupt the NW drift of sediment, resulting in beach accretion to the south of the harbour. To the north of Portwilliam, the beach is highly reflective dominated by gravels and boulders. A natural gravel ridge is located along the toe of the defences. Wave overtopping occurs when onshore wind combines with high tide / storm surge conditions.
			Pwill002		Wall	Masonry	4	No information	
			Pwill003	Port William Harbour Breakwater	Breakwater	Concrete	3	Council (Roads)	
			Pwill004	Port William Harbour East	Wall	Masonry	3	Council	
			Pwill005		Wall	Concrete	3	Council	
			Pwill006		Wall	Masonry	4	Council	
			Pwill007	Port William Quay (Harbour Road)	Quay	Concrete	3	Council	
			Pwill008	Port William Promenade	Promenade	Rock	4	Community Resources / Council	
			PWill	A747 Airlour to North Barsalloch	Wall	Masonry	2		
		21	Auchen001	Cock Inn, Auchenmaig	Wall	Conglomerate	4	Community Council	Change in the orientation of the shoreline traps the NW sediment drift. Gravel ridge at the toe of the defences. Long-term potential for loss of intertidal area with increasing sea level.
			Auchen 002	Auchenmaig Bay	Promenade	Conglomerate	4	Council (Roads)	

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
7	CPU 4	21	Mill001	Stairhaven Road	Promenade	Rock	4	Council (Roads)	No issues identified to the north, to the south the presence of reflective revetment has cut off potential sediment source. This will result in the narrowing of the beach at this location.
			Mill002	Stairhaven South	Groyne		2	Private	May reduce the NW drift of sediment.
			Auch003	Garheugh Port	Wall	Masonry	3	Council (Roads)	No issues identified.
			Auch004		Wall	Masonry	3	Council (Roads)	
		23		Sandhead Park	Wall	-	-	Private	Scouring will continue along the adjacent shoreline, leading to an offset.
			Ard001	Chapel Rossan Bay South	Wall	Concrete	4	Private	A naturally reflective gravel beach with exposed rock platform, no issues identified.
			Ard002	Chapel Rossan	Wall	Concrete	4	Private	
			Ard003		Wall	Concrete	4	Council (Roads)	
			Ard004	Dyemill House	Promenade	Earth	2	Council (Roads)	
			Ard005	Main Street, Sand Head	Wall	Concrete	3	Council (Roads)	Healthy macro-tidal beach system as indicated by the
			Ard006		Wall	Rock	3	Council (Roads)	

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
7	CPU 4	23	Ard007	Main Street, Sand Head	Wall	Masonry	2	Council (Roads)	ridge and runnel beach morphology. This area is a natural sediment sink, however the presence of structures may potentially alter this highly dissipative sediment regime particularly during storm occurrence, resulting in increased beach loss at this location and scouring of adjacent shoreline.
		24	Drum011	Low Curghie	Promenade	Concrete / Rock	4	Council (Roads)	Southern extent of PU24 coastal defence. Defences back onto a field and fronted by a narrow beach. The presence of this reflective structure may reduce the residual life of adjacent defences.
			Drum012	A716 Kilstay Bay	Wall	Concrete	5	Council (Roads)	Wall located along the entire stretch of Kilstay Bay. It is assumed that the A716 is positioned upon the crest of a mid-Holocene beach. The presence of the wall is highly reflective. To the north the beach is

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
7	CPU 4	24	Drum012	A716 Kilstay Bay	Wall	Concrete	5	Council (Roads)	gravel dominated and to the south there is some sand accumulation. Gravel ridges are present at the toe of the wall. Wave overtopping is an issue. Following storm events the A716 is littered with gravel clasts.
			Drum013	Terally Bay (South)	Embankment	Concrete	3	Council (Roads)	Up to two gravel ridges have accumulated along the toe of this wall. The length of the gravel beach narrows and steepens towards the south. Platform exposed. Features are typical of a reflective morphodynamic regime under storm condition. Wave-overtopping is an issue. Assume that largest waves are associated with an onshore wind, high-tide / storm surge conditions.
			Drum014	Terally Bay (North)	Wall	Concrete	4	Council (Roads)	

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
7	CPU 4	25		Drummore Park	Revetment	Rock	-	Private	Adjacent coastline will continue to erode, leading to an offset. Local steepening of beach as sea level rises.
			Drum001	Cailiness Road	Wall	Concrete	3	Council (Roads)	Embryonic dunes & marram grass located seaward of the defence, narrowing northwards. Wall fronted landwards by grassy verge. Easterly orientation provides shelter form severe waves.
			Drum002		Promenade	Concrete	2	Council (Roads)	Fronted by gravel beach and rock platform, may acts to dissipate wave energy.
			Drum003		Promenade	Concrete	3	Council (Roads)	Groynes located seawards of these defences. It is assumed that are emplaced to prohibit the northward movement of sediment and reduce the siltation of the harbour.
			Drum004	Drummore Harbour (East)	Wall	Masonry	3	Private	Siltation of Harbour area.
			Drum005		Quay	Masonry	4	Private	
			Drum006		Wall	Concrete	2	Private	
			Drum007	Harbour Road	Promenade	Earth	4	Private	
			Drum008	Drummore Harbour (West)	Breakwater	Rock	3	Private	Beach accretion.

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
7	CPU 4	25	Drum009	Shore Road (East)	Promenade	Concrete	3	Council (Roads)	Structure fronted by wide sandy beach, with embryonic dunes and marram grass located landwards.
			Drum010	Shore Road (North)	Promenade	Concrete	4	Council (Roads)	Beach narrows and steepens seaward of the defences. Defences support a steep landwards bank. Undercutting of the defence could result is the avalanching of the adjacent cliffs.
		26	Mary001	Maryport Bay	Promenade	Rock	3	Private	Reflective structure may exacerbate beach erosion. Structure disconnects sediment supply from the back beach. This has contributed to localised issues of shoreline erosion. Over the long-term this will result in the loss of the sandy beach.
6d	CPU 5	27	Portl001	Port Logan Quay	Quay	Rock / Concrete	3	Private	This structure acts as a breakwater, maintaining beach sediment. Independent beach unit.

APPENDIX B – DEFENCE ASSESSMENT

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
6d	CPU 5	27	Portl002	Port Logan	Wall	Masonry	4	Council (Roads)	Structure fronted by a sandy beach. Independent beach unit.
			Plogan001	Port Logan Bay (North)	Embankment		4	Private	Localised scouring that may be seasonal.
		28	Pp001	Dunskey Street	Promenade	Concrete	4	Private	Relict structure, fronting a highly reflective pocket beach.
			Pp002	South Crescent Carpark	Wall	Concrete	3	Council (Roads)	Structure is fronted by a reflective rocky beach.
			Pp003		Promenade	Stone	5	Council (Roads)	Relict structure, fronting a highly reflective narrow rocky beach.
			Pp004	South Crescent	Promenade	Stone	2	Council (Roads)	Structure fronted by small sandy beach to the south and gravel rocky beach to the north. Area prone to wave overtopping.
			Pp005		Wall	Stone	3	Council (Roads)	
			Pp006	Portpatrick Quay	Quay	Stone	4	Council (Roads)	No issues identified.
			Pp007	North Crescent (west)	Wall	Concrete	3	Council (Roads)	
			Pp008		Wall	Concrete	3	Council (Roads)	Highly reflective rocky gravel dominated beach.
			Pp009		Wall	Concrete	3	Council (Roads)	
	CPU 6	31		Craichmore Golf Course	Revetment	Rock		Private	Narrowing and steepening of the foreshore.
				Glenside Slipway		Concrete		Private	Interrupts the northward drift of sediment.

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
6d	CPU 6	31	Strn027	A718 Marian Port	Promenade	Earth	3	Council (Roads)	A718 runs along the crest of a Late Holocene beach, storm beach accumulated along the toe of the defences. Localised scouring. Defences cut off a former sediment source.
			Strn028		Promenade	Concrete	4	Council (Roads)	
			Strn029	Wig Bay	Embankment	Earth	3	Private	Scouring related to fluvial outlet, no issues identified.
			Salch001	A718 Low Salchrie	Wall		2	Council (Roads)	A718 runs along the crest of a Late Holocene beach, storm beach accumulated along the toe of the defences. Localised scouring, no issues identified. Located adjacent to an alluvial fan deposit.
		32		Stranraer A77	Wall			Transport Scotland	
				Stranraer	Wall			Private	
			Strn009	Ryan Bay Holiday Park	Promenade	Earth	2	Private	Narrow gravel dominated beach, defences cut off sediment source area.
			Strn010	A77 (Beach Cottage North)	Wall	Concrete	4	Transport Scotland	
			Strn011		Promenade	Concrete	5	Transport Scotland	
			Strn012	A77 (Beach Cottage South)	Wall	Concrete	3	Transport Scotland	Narrowing of sandy beach, increased back-beach erosion.
			Strn013	Cairnryan Road (Bishops Burn)	Wall	Concrete	4	Transport Scotland	

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
6d	CPU 6	32	STR013b	Sandmill Farm	Wall		4	Transport Scotland	Sediment accretion, wide sandy beach.
			Strn014	A77 Cairnryan Road	Wall	Concrete	5	Transport Scotland	Sandy beach. Failure of defence imminent.
			Strn015		Wall	Masonry	5	Transport Scotland	
			Strn016	Stranraer Harbour and Marina	Wall	Conglomerate	3	Community Council & Council	Stranraer Marina, evidence of siltation.
			Strn017		Wall	Concrete	5	Community Council & Council	
			Strn018		Promenade	Concrete	3	Community Council & Council	
			Strn019	Foreland Place to Loch Ryan Sailing Club	Promenade	Concrete	4	Community Council & Council	Sediment accretion, presence of a sandy beach, localised scouring towards the north.
			Strn020		Wall	Concrete	2	Community Council & Council Community Council & Council	
			Strn021		Wall	Concrete	3	Community Council & Council	
			Strn022	Larg Road, Broadstone Road to Sheuchan Street Carpark	Wall	Concrete	4	Private	Steep beach, localised scouring.
			Strn023		Wall	Concrete	4	Private	
			Strn024		Promenade	Concrete	3	Private	
			Strn025		Promenade	Concrete	4	Private	
			Strn026		Wall	Rock	4	Private	
		33		Bankhead 2	Wall			Transport Scotland	

Coastal Cell	CPU	Policy Unit	Name	Location	Defence Type	Material	Grade	Ownership	Impacts on Process and adjacent coastline
6d	CPU 6	33	Strn007	A77 Cairnryan	Promenade	Earth	3	Transport Scotland	Former railway platform.
			Strn008		Promenade	Concrete	5	Transport Scotland	Failure of defence imminent. Unlikely to immediately affect the A77.
		34		Old House Point	Pier			Private	
				Cairnryan Old Pier	Pier			Private	
				Bankhead 1				Transport Scotland	
				Bankhead 2	Wall			Transport Scotland	
			Strn001	A77 Cairnryan Ferry Terminal	Promenade	Wood / rock	2	Private	Steep and rocky adjacent shoreline, no issues identified.
			Strn002		Promenade	Concrete	4	Transport Scotland	
			Strn003	Cairnryan Carpark	Promenade	Earth	3	Transport Scotland	Localised embankment erosion, encroaching upon reclaimed land.
			Strn004	Cairnryan Carpark	Promenade	Concrete	5	Transport Scotland	
			Strn005	Cairnryan Lighthouse	Promenade	Earth	3	Private	
			Strn006	Cairnryan Village	Promenade	Earth	4	Transport Scotland	

Table B1-2 Dumfries & Galloway Defence Assessment