

Coastal	Focus	Option	Flood Management Corridors and Coastal Zones			Screening Comment
			Coastal	Operational	Offshore	
			Onshore measures	Set-back flood wall	1	
	Set-back demountable defences	1	1	3		
	Streetscaping / raise road level	1	1	3		
Shoreline measures	Raise coastline flood wall	1	2	3		
	Demountable defences	1	1	3		
Intertidal measures	Rip-rap / groynes	1	3	3	Intertidal measures not applicable in offshore environment. Construction within operational / offshore areas not compatible with navigational activities and present safety risk to boat users. Limited existing sandy beach material, or natural sediment supply. Nourishment not considered appropriate to local setting. Additionally, there is a risk of material accumulating in dredged navigation channels and berths. There is no existing salt marsh habitat in the vicinity of Oban, and in this exposed and potentially high energy environment salt marsh establishment is not considered suitable. Creation of lagoons in coastal area would also impact upon navigation and safety. The deep, steep sloping bathymetry in the immediate offshore zone is prohibitive to the engineering works which would be required. Likely benefits (in terms of reduced flood damages due to buffering of wave overtopping action) unlikely to be outweighed by cost.	
	Reclamation plus flood wall / berm	1	3	3		
	Beach nourishment	3	3	3		
	Salt marsh creation	3	3	3		
	Lagoons	3	3	3		
Offshore wave control structures	Pontoons / Breakwaters	2	2	2	Potential to buffer wave overtopping, may pose obstacle/risk to navigation. Depth of bathymetry in immediate offshore zone prohibitive to the engineering works which would be required for offshore breakwaters.	
	Artificial reef	3	3	2	Reef construction within coastal / operational areas not compatible with navigational activities and presents a safety risk to boat users. Likely benefits (in terms of reduced flood damages due to buffering of wave overtopping action) unlikely to be outweighed by cost.	
	Tidal barrage	3	3	3	Not compatible with current navigational activities and present additional safety risk to boat users. Likely benefits unlikely to be outweighed by significant cost.	

Other: Structural	Focus	Option	Zone		Screening Comment
			Catchment-wide	Targeted to flood-risk areas	
			Access provision	By-pass roads / diversions	
Asset Management	Routine maintenance / management / upgrades of drainage network	2	1	Strategic routine / responsive maintenance and upgrades recommended. Effort should be targeted where issues are known to impact most significantly upon flood risk receptors.	
	Watercourse maintenance / management	2	1		
Property level measures (retro-fit)	Protection (e.g. flood walls, demountable flood gates, raise threshold levels)	3	1	Property level protection only required where specific flood risk identified by study or property owner.	
	Resilience (e.g. concrete floors, raised electrical networks)	3	1		
Relocation / managed retreat	Relocate flood risk properties / assets out of flood risk zone	3	1	Relocation to be considered only as a last resort where not economically viable to provide sufficient protection to individual properties. Managed retreat or replacement with less vulnerable land uses should be incorporated into long term planning strategies.	

Other: Non-Structural	Focus	Option	Zone		Screening Comment
			Catchment-wide	Targeted to flood-risk	
Monitoring, forecasting & warning		Flow / rainfall gauging station	1	1	
		Flood Alert systems & dissemination mechanisms	1	1	
Community adaptation		Community education / information sharing / awareness raising	1	1	Measures carried forward for MCA
		Emergency response planning	1	1	
		Business Continuity planning	1	1	
		Community Flood Action Groups / Plans	1	1	
		Resilient community plans	1	1	
		Flood insurance provision	3	1	Specialist flood insurance provision required where flood risk identified by study or property owner
Land Use Policy		Improved adherence	1	1	Measures carried forward for MCA
		Increase stringency	1	1	
		Clarify responsibilities for existing surface water management infrastructure (including SUDS)	1	1	
Further study		Improve understanding of risks & impacts	1	1	
		Outline / detailed design	1	1	

C MULTI-CRITERIA SCORING SYSTEM

Categories	Criteria	Description	Predicted Impact				
			Significant negative	Marginal negative	Neutral / Intangible	Marginal positive	Significant positive
Reduction on Impact on Flooding	Local Level	Tangible effect on flood risk receptors at local / sub-catchment level	-2	-1	0	1	2
	Catchment Level*	Tangible effect on flood risk receptors at wider / catchment level	-2	-1	0	1	2
	Priority risk receptors*	Direct protection for most vulnerable people / properties / vital infrastructure	-2	-1	0	1	2
	Timescale	Effectiveness over short- to medium- term (1-5 years)	-	-	0	1	2
Technical	Performance*	Provides required standard of protection where required throughout lifetime of scheme (quantifiable)	-	-	0	1	2
	Buildability	Complexity / safety of construction / conflict with existing structures	-2	-1	0	-	-
	Adaptability	Ability to make future modifications to accommodate climate or land use change in future	-	-	0	1	2
	Reliability / sustainability	Durable & permanent; no risk of failure due to requirement for active input required during flood emergency; minimal maintenance over design life of measure.	-	-	0	1	2
Land use compatibility	Landowner support	Likely agreeability to measure (higher for public ownership / low number of landowners)	-2	-1	0	1	2
	Utilities & infrastructure	Conflicts / opportunities presented by utilities or infrastructure	-2	-1	0	-	-
	Land use compatibility	Potential impact on current land use	-2	-1	0	1	2
Economic	Capital cost	Cost to install	-2	-1	0	-	-
	Operational cost	Cost to monitor & maintain	-2	-1	0	-	-
	Alternative support	Availability of support from other stakeholders (financial / non-financial)	-	-	0	1	2
Environmental	Carbon sequestration	Contribution to climate change adaptation at catchment scale through carbon sequestration	-	-	0	1	2
	Ecology	Impact on local habitats (creation, connectivity), protected species and designated sites, invasive species	-2	-1	0	1	2
	Hydrology & water quality	Effect on general hydrological regime & water quality e.g. baseflows, suspended solids, chemical quality	-2	-1	0	1	2
	Soils & hydrogeology	Impact on geology & soils, including peat	-2	-1	0	1	2
Social	Hydromorphology & RBMP	Impact on river processes (patterns of erosion, transport & deposition) and RBMP classification	-2	-1	0	1	2
	Community	Supported by local community	-2	-1	0	1	2
	Landscape & heritage	Fitting for local landscape & sensitive to cultural heritage designations	-2	-1	0	1	2
	Amenity & tourism	Visual quality, access provision and connectivity to water environment	-2	-1	0	1	2
Regulatory	Local Development	Aligns with local strategies (Council & other stakeholders)	-2	-1	0	1	2
	Consents / approvals	Requirement for consents / licensing e.g. Planning Permission, Controlled Activities Regulations, Environmental Impact Assessment, Controlled Waste.	-2	-1	0	-	-

* Criteria allocated double weighting

D MULTI-CRITERIA ANALYSIS OF OPTIONS

Note: Drawing 170506_051, Appendix E, displays the spatial location of long-list measures in interactive 'layered pdf' format.

Management Type	Location / Catchment	Focus	Summary of potential measures	Reduction on Impact of Flooding			Technical			Land use compatibility			Economic		Environmental			Social		Regulatory		Score	Short-list (primary + secondary measures)						
				Local / Sub-catchment Level	Wider / Catchment Level*	Priority risk receptors* Timescale	Performance* Buildability	Adaptability	Reliability / sustainability	Landowner support	Utilities & infrastructure	Land use compatibility	Capital cost	Operational cost	Alternative support	Carbon sequestration	Ecology	Hydrology & Water Quality	Soils, geology & hydrogeology	Hydromorphology & RBWP	Community support			Landscape & heritage	Amenity & tourism	Local Development	Consents / approvals		
Other: Structural	Flood-risk areas	Asset Management	Watercourse maintenance / management	2	1	2	2	1	-1	2	1	2	0	0	0	-1	0	0	0	1	0	0	2	0	1	1	0	20	y
Waterbody Engineering	Glenshellach Burn	Floodplain Storage / Structural Modification	Temporary flood storage area over Lon Mor via bund and culvert modification	2	2	2	2	2	-1	2	2	2	0	0	-2	-1	0	0	0	0	0	2	0	0	0	0	-1	19	y
Waterbody Engineering	Black Lynn	Structural modification	Enhance capacity of critical structures e.g. Market St, Soroba Lane bridges	2	2	2	2	2	-2	0	2	2	-1	0	-2	0	0	0	0	0	1	2	0	0	0	0	-1	17	y
Waterbody Engineering	Alltan Tartach	Floodplain Storage	Temporary flood storage in Mossfield sports pitches	1	2	2	2	2	-1	2	2	2	0	-1	-1	-1	0	0	0	0	0	2	0	-1	0	-1	17	y	
Other: Structural	Catchment-wide	Asset Management	Watercourse maintenance / management	2	1	2	2	1	-1	2	1	2	0	0	0	-2	0	0	0	1	0	0	1	0	1	0	0	17	y
Natural Flood Management	Alltan Tartach	Catchment Woodland (non-floodplain)	Targeted woodland creation	1	2	1	0	1	-1	2	1	1	0	-1	-1	0	1	1	1	1	1	0	1	1	0	0	0	17	y
Natural Flood Management	Soroba Burn	Catchment Woodland (non-floodplain)	Targeted woodland creation	1	2	1	0	1	-1	2	1	1	0	-1	-1	0	1	1	1	1	1	0	1	1	0	0	0	17	y
Natural Flood Management	Glenshellach Burn	Catchment Woodland (non-floodplain)	Targeted woodland creation	1	2	1	0	1	-1	2	1	1	0	-1	-1	0	1	1	1	1	1	0	1	1	0	0	0	17	y
Waterbody Engineering	Soroba Burn / Glenshellach Burn	Floodplain Storage / Structural Modification	Temporary flood storage area over Lon Mor via bund and culvert modification, with storage maximised (e.g. through removal of 'shinty pitch' feature, diversion of excess flows from Soroba Burn or downstream relocation of bund)	2	2	2	2	2	-1	2	2	0	0	0	-2	-1	0	0	0	0	0	2	0	0	0	0	-2	16	y
Other: Structural	Flood-risk areas	Property level measures (retrofit)	Protection (e.g. flood walls, demountable flood gates, raise threshold levels)	2	1	2	2	1	-1	2	1	2	-1	0	-1	0	0	0	0	0	0	2	0	0	0	0	0	16	y

Management Type	Location / Catchment	Focus	Summary of potential measures	Reduction on Impact of Flooding			Technical			Land use compatibility			Economic			Environmental			Social			Regulatory		Score	Short-list (primary + secondary measures)		
				Local / Sub-catchment Level	Wider / catchment Level*	Priority risk receptors* Timescale	Performance*	Buildability	Adaptability	Reliability / sustainability	Landowner support	Utilities & infrastructure	Land use compatibility	Capital cost	Operational cost	Alternative support	Carbon sequestration	Ecology	Hydrology & Water Quality	Soils, geology & hydrogeology	Hydromorphology & RBMP	Community support	Landscape & heritage			Amenity & tourism	Local Development
Other: Non-structural	Catchment-wide	Community adaptation	Community awareness, emergency planning, action groups, flood insurance	1	1	2	2	1	0	2	1	2	0	0	-1	0	0	0	0	0	2	0	0	0	0	16	y
Other: Non-structural	Catchment-wide	Land Use Policy	Improved stringency / adherence, clarify responsibilities for existing surface water management infrastructure (including SUDS)	1	0	2	2	2	0	2	2	-1	0	-1	0	0	0	0	0	1	0	0	1	0	15	y	
Waterbody Engineering	Black Lynn	Flood Defence	Upgrade to flood defences along length of watercourse	2	2	2	2	2	-2	1	2	2	-1	0	-2	0	0	0	0	0	2	-1	-1	0	-1	15	y
Surface Water	Lochavullin SWMZ	Surface Water Network	Various network improvements & pump upgrade	2	2	2	2	2	-2	1	1	2	-1	0	-2	-1	0	0	0	0	2	0	0	0	-1	15	y
Coastal	Coastal	Shoreline measures	Shoreline defences (permanent + demountable where required)	2	2	2	2	2	-1	2	2	2	-1	-1	-2	-1	0	0	0	0	2	-1	-1	0	-1	15	y
Other: Structural	Flood-risk areas	Asset Management	Routine maintenance / management / upgrades of drainage network	2	1	2	2	1	-1	1	1	2	-1	0	-1	-1	0	0	0	1	0	0	1	0	1	15	y
Other: Non-structural	Catchment-wide	Monitoring, forecasting & warning	Flow monitoring & alerts	1	1	2	2	1	-1	2	1	2	0	0	-1	-1	0	0	0	0	2	0	0	0	0	15	y
Natural Flood Management	Loch Gleann a' Bhearraidh	Catchment Woodland (non-floodplain)	Targeted woodland creation	1	1	1	0	1	-1	2	1	1	0	-1	-1	0	1	1	1	1	0	1	1	0	0	15	y
Natural Flood Management	Glenshellach Burn	River & Floodplain Restoration	Riparian buffers, channel restoration, floodplain storage, floodplain roughness measures	1	1	1	1	0	-1	2	1	1	0	-1	-1	0	1	1	1	1	1	1	1	0	0	15	y
Natural Flood Management	Loch Gleann a' Bhearraidh	River & Floodplain Restoration	Riparian buffers, channel restoration, floodplain storage, floodplain roughness measures	1	1	1	1	0	-1	2	1	1	0	-1	-1	0	1	1	1	1	1	1	1	0	0	15	y
Natural Flood Management	Soroba Burn	River & Floodplain Restoration	Riparian buffers, channel restoration, floodplain storage, floodplain roughness measures	1	1	1	1	0	-1	2	1	1	0	-1	-1	0	1	1	1	1	1	1	1	0	0	15	y
Waterbody Engineering	Soroba Burn	Flood Defence	Flood wall or embankment to defend Mill Park	2	0	2	2	2	-1	2	2	2	0	0	-1	-1	0	0	-1	0	0	0	0	0	-1	14	y
Natural Flood Management	Alltan Tartach	River & Floodplain Restoration	Riparian buffers, channel restoration, floodplain storage, floodplain roughness measures	2	1	1	1	0	-1	2	1	-1	0	-1	-1	0	1	1	1	1	1	1	1	0	0	14	y
Waterbody Engineering	Alltan Tartach	Channel capacity	Strategic flood routing along Miller Rd to Black Lynn	2	1	2	2	1	-1	2	2	1	-1	-1	-1	0	0	0	0	2	0	0	0	-1	13	y	
Natural Flood Management	Alltan Tartach	Catchment Wetlands (non-floodplain)	Targeted wetland restoration / creation, blanket peat restoration	1	1	1	1	0	-1	1	1	1	0	-1	-1	0	1	1	1	1	0	1	1	0	0	13	

Management Type	Location / Catchment	Focus	Summary of potential measures	Reduction on Impact of Flooding			Technical			Land use compatibility			Economic			Environmental			Social			Regulatory		Score	Short-list (primary + secondary measures)				
				Local / Sub-catchment Level	Wider / catchment Level*	Priority risk receptors* Timescale	Performance*	Buildability	Adaptability	Reliability / sustainability	Landowner support	Utilities & Infrastructure	Land use compatibility	Capital cost	Operational cost	Alternative support	Carbon sequestration	Ecology	Hydrology & Water Quality	Soils, geology & hydrogeology	Hydromorphology & RBMP	Community support	Landscape & heritage			Amenity & tourism	Local Development	Consents / approvals	
Natural Flood Management	Glenshellach Burn	Catchment Wetlands (non-floodplain)	Targeted wetland restoration / creation, blanket peat restoration	1	1	1	1	0	-1	1	1	1	0	-1	-1	0	1	1	1	1	0	1	1	0	0	0	13		
Natural Flood Management	Loch Gleann a' Bhearraidh	Catchment Wetlands (non-floodplain)	Blanket peat restoration	1	1	1	1	0	-1	1	1	1	0	-1	-1	0	1	1	1	1	0	1	1	0	0	0	13		
Natural Flood Management	Soroba Burn	Catchment Wetlands (non-floodplain)	Targeted wetland restoration / creation, blanket peat restoration	1	1	1	1	0	-1	1	1	1	0	-1	-1	0	1	1	1	1	0	1	1	0	0	0	13		
Natural Flood Management	Coastal catchment (Dunollie)	River & Floodplain Restoration	Riparian buffers, channel restoration, floodplain storage, floodplain roughness measures	1	0	1	1	0	-1	2	1	1	0	-1	-1	0	1	1	1	1	1	1	1	0	0	0	13		
Natural Flood Management	Coastal catchment (Longsdale)	River & Floodplain Restoration	Riparian buffers, channel restoration, floodplain storage, floodplain roughness measures	1	0	1	1	0	-1	2	1	1	0	-1	-1	0	1	1	1	1	1	1	1	0	0	0	13		
Coastal	Operational	Shoreline measures	Shoreline defences (permanent + demountable where required)	2	1	2	2	2	-2	2	2	1	-1	-1	-2	-1	0	0	0	0	0	1	0	0	0	-1	12	(North Pier)	
Other: Structural	Catchment-wide	Asset Management	Routine maintenance / management / upgrades of drainage network	2	2	1	2	1	-1	1	1	1	-1	0	-2	0	0	0	0	1	0	0	1	0	1	0	12		
Coastal	Coastal	Intertidal measures	Reclamation + floodwall / berm, riprap / groynes	2	0	2	2	2	-2	2	2	2	-2	-1	-2	-1	0	0	-1	0	0	0	1	0	2	1	-2	11	y
Waterbody Engineering	Loch Gleann a' Bhearraidh	Reservoir Management	Increased storage at Loch Gleann a' Bhearraidh (altered outlet control)	0	2	2	2	2	-2	2	2	-2	-1	0	-2	-1	0	0	0	1	0	0	1	0	0	-1	11		
Waterbody Engineering	Black Lynn	Channel capacity	Remove invasive species & clear channel / re-profile to form 2-stage channel	1	0	1	2	1	-2	1	1	2	-1	0	-2	-1	0	0	1	0	0	1	2	2	2	0	-2	11	
Other: Non-structural	Catchment-wide	Further study	Improve understanding of risks & impacts	1	1	1	1	1	0	2	1	1	0	0	-1	-1	0	0	0	0	0	1	0	0	0	0	11		
Surface Water	Glenshellach SWMZ	Catchment level	Wetlands, ponds, basins	1	1	1	2	1	-1	1	1	1	-1	-1	-1	-1	0	1	1	1	0	0	1	0	1	0	-1	11	
Surface Water	Longsdale - North SWMZ	Catchment level	Wetlands, ponds, basins	1	1	1	2	1	-1	1	1	1	-1	-1	-1	-1	0	1	1	1	0	0	1	0	1	0	-1	11	
Surface Water	Soroba SWMZ	Catchment level	Wetlands, ponds, basins	1	1	1	2	1	-1	1	1	1	-1	-1	-1	-1	0	1	1	1	0	0	1	0	1	0	-1	11	
Other: Structural	Flood-risk areas	Property level measures (retro-fit)	Resilience (e.g. concrete floors, raised electrical networks)	1	1	2	2	1	-1	1	1	1	-1	0	-1	-1	0	0	0	0	0	1	0	0	0	0	11	y	
Natural Flood Management	Coastal catchment (Dunollie)	Catchment Wetlands (non-floodplain)	Targeted wetland restoration / creation	1	0	1	1	0	-1	1	1	1	0	-1	-1	0	1	1	1	1	0	1	1	0	0	0	11		
Natural Flood Management	Coastal catchment (Longsdale)	Catchment Wetlands (non-floodplain)	Targeted wetland restoration / creation, blanket peat restoration	1	0	1	1	0	-1	1	1	1	0	-1	-1	0	1	1	1	1	0	1	1	0	0	0	11		

Management Type	Location / Catchment	Focus	Summary of potential measures	Reduction on Impact of Flooding			Technical			Land use compatibility			Economic			Environmental			Social			Regulatory		Score	Short-list (primary + secondary measures)			
				Local / Sub-catchment Level	Wider / catchment level*	Priority risk receptors* Timescale	Performance*	Buildability	Adaptability	Reliability / sustainability	Landowner support	Utilities & infrastructure	Land use compatibility	Capital cost	Operational cost	Alternative support	Carbon sequestration	Ecology	Hydrology & Water Quality	Soils, geology & hydrogeology	Hydromorphology & RBMP	Community support	Landscape & heritage			Amenity & tourism	Local Development	Consents / approvals
Natural Flood Management	Coastal catchment (Mill Dam)	Catchment Wetlands (non-floodplain)	Targeted wetland restoration / creation, blanket peat restoration	1	0	1	1	0	-1	1	1	1	0	-1	-1	0	1	1	1	1	1	0	1	1	0	0	0	11
Natural Flood Management	Coastal catchment (Pulpit Hill / Gallanach)	Catchment Wetlands (non-floodplain)	Targeted wetland restoration / creation, blanket peat restoration	1	0	1	1	0	-1	1	1	1	0	-1	-1	0	1	1	1	1	1	0	1	1	0	0	0	11
Natural Flood Management	Coastal catchment (Longsdale)	Catchment Woodland (non-floodplain)	Targeted woodland creation	1	0	1	0	0	-1	2	1	1	0	-1	-1	0	1	1	1	1	1	0	1	1	0	0	0	11
Natural Flood Management	Coastal catchment (Pulpit Hill / Gallanach)	Catchment Woodland (non-floodplain)	Targeted woodland creation	1	0	1	0	0	-1	2	1	1	0	-1	-1	0	1	1	1	1	1	0	1	1	0	0	0	11
Surface Water	Glencruitten / Mossfield SWMZ	Catchment level	Wetlands, ponds, basins	1	1	1	2	1	-1	1	1	-1	-1	-1	-1	-1	0	1	1	1	0	0	1	0	1	0	-1	9
Waterbody Engineering	Alltan Tartach	Channel capacity	Strategic flood routing from Mossfield rugby pitch to Soroba Burn via Dalintart	2	1	2	2	1	-1	2	2	-1	-1	-1	-1	0	0	0	0	0	-1	1	0	0	0	-1	9	
Surface Water	Lochavullin SWMZ	Catchment level	Wetlands, ponds, basins	1	1	1	2	1	-1	1	1	1	-1	-2	-2	-1	0	1	1	1	0	0	1	0	1	0	-1	9
Surface Water	Corran SWMZ	Catchment level	Wetlands, ponds, basins	1	0	1	1	1	-1	1	1	1	-1	-1	-1	-1	0	1	1	1	0	0	1	0	1	0	-1	8
Surface Water	Town Centre - North SWMZ	Catchment level	Wetlands, ponds, basins	1	0	1	1	1	-1	1	1	1	-1	-1	-1	-1	0	1	1	1	0	0	1	0	1	0	-1	8
Surface Water	Corran SWMZ	Surface Water Network	Various network improvements	1	1	1	2	1	-1	1	1	1	-1	0	-1	-1	0	0	0	0	0	1	0	0	0	-1	8	
Surface Water	Glencruitten / Mossfield SWMZ	Surface Water Network	Various network improvements	1	1	1	2	1	-1	1	1	1	-1	0	-1	-1	0	0	0	0	0	1	0	0	0	-1	8	
Surface Water	Glenshellach SWMZ	Local level	Conveyance, filter drains, underground storage	1	1	1	2	1	-1	1	1	1	-1	-1	-1	-1	0	0	0	1	0	0	1	0	0	0	-1	8
Surface Water	Glenshellach SWMZ	Surface Water Network	Various network improvements	1	1	1	2	1	-1	1	1	1	-1	0	-1	-1	0	0	0	0	0	1	0	0	0	-1	8	
Surface Water	Longsdale - North SWMZ	Surface Water Network	Various network improvements	1	1	1	2	1	-1	1	1	1	-1	0	-1	-1	0	0	0	0	0	1	0	0	0	-1	8	
Surface Water	Soroba SWMZ	Surface Water Network	Various network improvements	1	1	1	2	1	-1	1	1	1	-1	0	-1	-1	0	0	0	0	0	1	0	0	0	-1	8	
Surface Water	Soroba Road (Lower) SWMZ	Surface Water Network	Various network improvements	1	1	1	2	1	-1	1	1	1	-1	0	-1	-1	0	0	0	0	0	1	0	0	0	-1	8	
Surface Water	Town Centre - North SWMZ	Surface Water Network	Various network improvements	1	1	1	2	1	-1	1	1	1	-1	0	-1	-1	0	0	0	0	0	1	0	0	0	-1	8	
Surface Water	Town Centre - South SWMZ	Surface Water Network	Various network improvements	1	1	1	2	1	-1	1	1	1	-1	0	-1	-1	0	0	0	0	0	1	0	0	0	-1	8	
Surface Water	Gallanach SWMZ	Property-level	Rainwater harvesting, green roofs	1	0	1	1	0	-1	1	1	1	0	0	-1	-1	0	1	1	1	0	0	1	0	0	0	0	8
Other: Structural	Flood-risk areas	Relocation / managed retreat	Relocate flood risk properties / assets out of flood risk zone	2	0	2	0	2	-2	2	2	-2	0	0	0	0	0	0	0	0	0	-1	0	0	1	-1	7	
Surface Water	Gallanach SWMZ	Local level	Rain gardens, bioretention, tree pits, evapotranspiration,	1	0	1	1	1	-1	1	1	1	-1	-1	-1	0	1	1	1	0	0	1	0	0	0	-1	7	

Management Type	Location / Catchment	Focus	Summary of potential measures	Reduction on Impact of Flooding			Technical			Land use compatibility			Economic			Environmental			Social			Regulatory		Score	Short-list (primary + secondary measures)			
				Local / Sub-catchment Level	Wider / catchment Level*	Priority risk receptors* Timescale	Performance*	Buiddability	Adaptability	Reliability / sustainability	Landowner support	Utilities & infrastructure	Land use compatibility	Capital cost	Operational cost	Alternative support	Carbon sequestration	Ecology	Hydrology & Water Quality	Soils, geology & hydrogeology	Hydromorphology & RBMP	Community support	Landscape & heritage			Amenity & tourism	Local Development	Consents / approvals
			conveyance, interception measures, swales	1	0	1	2	1	-1	1	1	1	-1	-1	-1	0	0	0	1	0	0	1	0	0	0	0	7	
Surface Water	Corran SWMZ	Local level	Overland Conveyance & Interception measures	1	0	1	2	1	-1	1	1	1	-1	-1	-1	0	0	0	1	0	0	1	0	0	0	0	7	
Surface Water	Dunollie SWMZ	Local level	Overland Conveyance & Interception measures	1	0	1	2	1	-1	1	1	1	-1	-1	-1	0	0	0	1	0	0	1	0	0	0	0	7	
Surface Water	Longsdale - North SWMZ	Local level	Overland Conveyance & Interception measures, underground storage	1	0	1	2	1	-1	1	1	1	-1	-1	-1	0	0	0	1	0	0	1	0	0	0	0	7	
Surface Water	Longsdale - South SWMZ	Local level	Overland Conveyance & Interception measures, swale	1	0	1	2	1	-1	1	1	1	-1	-1	-1	0	0	0	1	0	0	1	0	0	0	0	7	
Surface Water	Soroba SWMZ	Local level	Overland Conveyance & Interception measures	1	0	1	2	1	-1	1	1	1	-1	-1	-1	0	0	0	1	0	0	1	0	0	0	0	7	
Surface Water	Soroba Road (Lower) SWMZ	Local level	Overland Conveyance & Interception measures	1	0	1	2	1	-1	1	1	1	-1	-1	-1	0	0	0	1	0	0	1	0	0	0	0	7	
Surface Water	Glencruitten / Mossfield SWMZ	Local level	Rain gardens, bioretention, tree pits, evapotranspiration	1	0	1	1	0	-1	1	1	1	-1	-1	-1	0	1	1	1	0	0	1	1	0	0	0	7	
Waterbody Engineering	Coastal (Longsdale)	Structural modification	Formalised flood routing, streetscaping, access diversions & property-level protection	2	0	1	2	1	-1	1	1	1	-1	-1	-1	0	0	0	0	0	1	0	0	0	-1	6		
Surface Water	Lochavullin SWMZ	Local level	Interception	1	0	1	2	1	-1	1	1	1	0	-1	-1	-1	0	0	0	0	1	0	0	0	-1	6		
Coastal	Operational	Onshore measures	Set-back defences / streetscaping	2	0	2	2	2	-2	1	1	-1	-2	-1	-2	-1	0	0	0	0	1	0	0	0	-1	5	(North Pier)	
Waterbody Engineering	Soroba Burn	Channel capacity	Re-profile channel along Mill Park to form 2-stage channel	1	1	1	2	1	-2	1	1	1	-1	0	-1	-1	0	0	-1	0	0	-1	1	0	0	-1	5	
Coastal	Operational	Offshore wave control structures	Pontoon / breakwater	1	0	2	2	1	-2	1	2	-1	0	-2	-1	-1	0	0	0	0	0	1	0	0	0	-1	5	
Coastal	Coastal	Offshore wave control structures	Pontoon / breakwater	1	0	2	2	1	-2	1	2	-1	0	-1	-1	-1	0	0	0	0	0	1	-1	0	-1	0	4	
Waterbody Engineering	Alltan Tartach	Flood Defence	Localised flood defences in lower reaches	1	-1	2	2	2	-1	1	1	1	-1	-1	-1	-1	0	0	-1	-1	0	-1	1	-1	0	0	3	
Waterbody Engineering	Black Lynn	Floodplain Storage	Temporary flood storage in Lochavullin car park (multiple use, public safety measures required)	2	0	2	2	1	-2	1	1	-1	-2	-1	-2	-1	0	0	0	0	1	1	0	-1	0	-1	3	
Waterbody Engineering	Black Lynn	Channel capacity	Pump water directly to sea (or further down the Black Lynn) from Lochavullin car park	2	2	2	2	2	-2	-2	0	0	-2	0	-2	0	0	0	-1	0	0	0	0	0	0	-2	2	
Waterbody Engineering	Soroba Burn	Channel capacity	Flood routing along railway line	2	2	2	2	1	-2	0	1	-2	-2	-2	-2	0	0	0	0	0	1	0	0	0	-2	2		

Management Type	Location / Catchment	Focus	Summary of potential measures	Reduction on Impact of Flooding			Technical			Land use compatibility			Economic			Environmental			Social			Regulatory		Score	Short-list (primary + secondary measures)			
				Local / Sub-catchment Level	Wider / catchment Level*	Priority risk receptors* Timescale	Performance*	Buildability	Adaptability	Reliability / sustainability	Landowner support	Utilities & Infrastructure	Land use compatibility	Capital cost	Operational cost	Alternative support	Carbon sequestration	Ecology	Hydrology & Water Quality	Soils, geology & hydrogeology	Hydromorphology & RBMP	Community support	Landscape & heritage			Amenity & tourism	Local Development	Consents / approvals
Waterbody Engineering	Alltan Tartach	Structural modification	Increased conveyance capacity of key structures e.g. dualling or widening of Miller Rd culvert	1	-1	2	2	1	-2	1	1	1	-2	-1	-1	0	0	0	0	0	1	0	0	0	-1	2		
Coastal	Coastal	Onshore measures	Set-back defences / streetscaping	2	0	2	2	2	-2	1	1	-2	-2	-2	-1	0	0	0	0	0	1	-1	-1	0	-1	1		
Surface Water	Town Centre - North SWMZ	Local level	Interception measures & underground void space	1	0	1	2	1	-2	1	1	-1	-2	-1	-1	-1	0	0	0	0	1	0	0	0	-1	1		
Coastal	Offshore	Offshore wave control structures	Pontoon / breakwater / artificial reef	1	0	1	2	1	-2	1	2	-2	0	-2	-2	-1	0	0	0	0	1	0	0	0	-1	1		
Waterbody Engineering	Soroba Burn	Channel capacity	Tunnel floodwater directly to sea from vicinity of Lon Mor	2	2	2	2	2	-2	0	-1	-2	-2	0	-2	-2	0	0	0	0	-1	-2	0	0	0	-2	0	
Waterbody Engineering	Black Lynn	Channel capacity	Targeted lowering of channel bed downstream of Lochavullin	2	1	2	2	2	-2	-1	0	-1	-2	-1	-2	-1	0	0	-1	0	0	0	0	0	-2	0		
Waterbody Engineering	Black Lynn	Flood Defence	Land-raising of Lochavullin car park & key access roads	2	-2	0	2	2	-2	-2	2	2	-2	2	-2	0	0	0	0	0	-1	0	0	1	0	-2	0	
Other: Structural	Flood-risk areas	Access provision	By-pass roads / diversions (e.g. Oban Development Road)	0	0	2	2	1	-2	2	1	-2	-2	-2	-2	-1	0	0	-1	0	-1	0	1	-1	1	-1	0	

E INTERACTIVE OPTIONS MAPS

The following maps are provided within this appendix, as well as *Volume 4: Maps, Media and Data Sources*

Title	Drawing Reference
Long-List Options	170506_051
Short-List Options	170506_050

The Options Maps are presented in 'Layered' pdf format to allow the reader to switch different layers of information on and off. They are presented at AO size to enable the user to zoom into areas of interest.

Using the Adobe Acrobat Reader desktop application (Downloadable from <https://get.adobe.com/uk/reader/>), layers can be activated and de-activated by clicking on the 'Layers' icon on the left pane (highlighted by the red circle below).



Legend

- A. Management Zones**
 - Surface Water Management Zones
 - Sub-catchments
 - Catchment Zones
 - Coastal
 - Offshore
 - Operational
- B. Long-List Options**
 - Floodplain Restoration
 - Floodplain Storage Enhancements
 - Catchment Woodlands / Cross-slope Buffer Strips
 - Wetland Creation / Restoration
 - Peat Restoration
 - Pump / Pipe System
- 1. Waterbody Engineering**
 - Reservoir / Loch Modifications
 - Temporary Flood Storage Zone
 - Structural Modification
 - Flood Routing
 - Set-back Embankment
 - Flood Wall
 - River Channel Modification
- 2. Natural Flood Management**
 - Channel Restoration (Modified Channel indicated)
 - Riparian Woodland / Riparian Buffers
- 3. Coastal**
 - Shoreline / Intertidal / Set-back Defences
 - Total Barrage Zone
 - Breakwater Zone
 - Artificial Reef Zone
- 5. Other: Structural**
 - Potential Urban Development Road Corridor
- 6. Other: Non-structural**
 - Flood monitoring / alerts

Do not scale this map
Client
Argyll and Bute Council

Project
Oban Flood Study

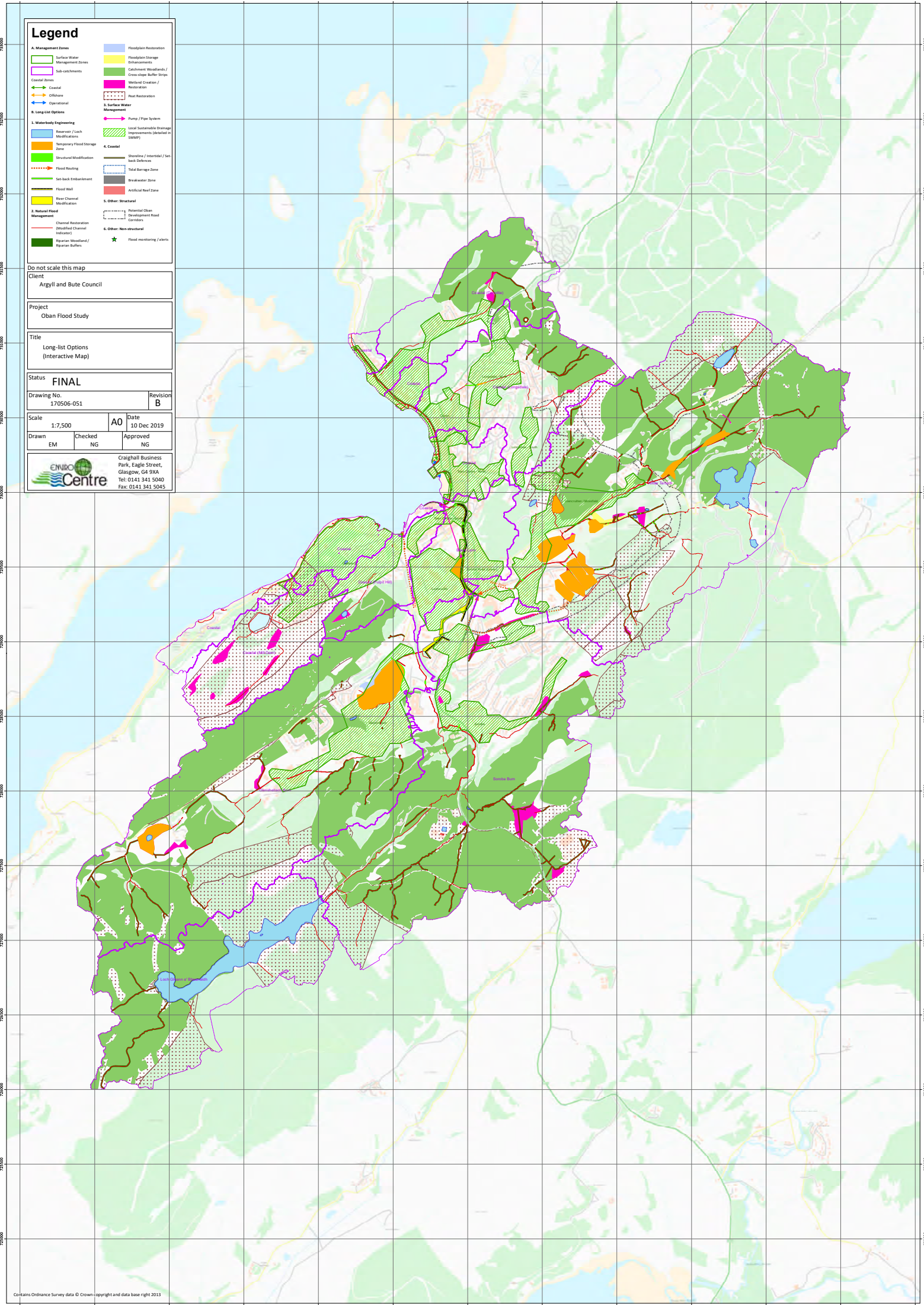
Title
Long-list Options
(Interactive Map)

Status
FINAL

Drawing No. 170506-051
Revision B

Scale 1:7,500
Date 10 Dec 2019

Drawn EM
Checked NG
Approved NG



Legend

- Short-list Flood Management Zones
- 1. Waterbody Engineering
 - Temporary Flood Storage Zone
 - Structural Modifications
- Flood Flooding
- Flood Wall
- River Channel Modification
- 2. Natural Flood Management
 - Riparian Woodland / Riparian Buffers
 - Floodplain Restoration
 - Floodplain Storage Enhancements
 - Catchment Woodlands / Cross-slope Buffer Strips
- 3. Surface Water Management
 - Pump / Pipe System
- 4. Coastal
 - Shoreline / Intertidal Defences
- 5. Other: Non-structural
 - Flood monitoring / alerts

Do not scale this map
 Client
 Argyll and Bute Council

Project
 Oban Flood Study

Title
 Short-list Options
 (Interactive Map)

Status **FINAL**

Drawing No. 170506-050 Revision C

Scale 1:7,000 A0 Date 10 Dec 2019

Drawn EM Checked NG Approved NG



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