

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

The Burrow CFERM scheme

Appendix 20A

Volume 3



Risk ID	Risk Event	Source and/or Pathways	Possible Cause	Reasonable worst-case scenario	Proposed Mitigation or Safety Controls as Part of Proposed Development or in other EIAR Chapters	Could this lead to a major accident and/or natural disaster with primary and tertiary mitigation in place?	Is the reasonable worst consequence managed to an acceptable level with primary and tertiary mitigation in place?	If no, what further mitigation measures are recommended ?
C1	Major Construction Vessel Collision or Allision during construction works	Working within existing ferry operation routes and/or leisure areas (e.g., sea kayaking and other water sports).	<ul style="list-style-type: none"> - Operator or system error - Navigational error - Severe weather - Engine failure 	<ul style="list-style-type: none"> - Injury/loss of life - Damage to marine environment from leaked oil /fluids - Damage to Infrastructure 	<ul style="list-style-type: none"> - Construction Environmental Management Plan (CEMP) - Using a land-based plant at exposed low tides for the construction of fishtail groynes to negate working with the water column - The development of a robust plan to monitor and respond to tides and storm events. <ul style="list-style-type: none"> - Community liaison - A mooring point to allow for the safe mooring of the dredger over all states of the tide. - Works undertaken in accordance with industry good practice measures, and health and safety regulations - Works carried out by suitably qualified personnel 	Yes	Yes - Considered to be managed to an acceptable level if all mitigation measures outlined are correctly implemented	N/A

Risk ID	Risk Event	Source and/or Pathways	Possible Cause	Reasonable worst-case scenario	Proposed Mitigation or Safety Controls as Part of Proposed Development or in other EIAR Chapters	Could this lead to a major accident and/or natural disaster with primary and tertiary mitigation in place?	Is the reasonable worst consequence managed to an acceptable level with primary and tertiary mitigation in place?	If no, what further mitigation measures are recommended ?
C2	Major traffic collision / allision	Movement of construction vehicles to and from site and working in close proximity to buildings roads etc.	<ul style="list-style-type: none"> - Contractor error - Operator error - Severe weather event - Unforeseen structural weakness 	<ul style="list-style-type: none"> - Injury/loss of life - Potential for damage to transport infrastructure and disruption to transport - Potential to discharge deleterious material (e.g. fuel) to watercourses - Fire/Explosion 	<ul style="list-style-type: none"> - Construction Environmental Management Plan (CEMP) - Use of approved routes to transport materials - A Construction Traffic Management Plan (CTMP) - Landowner and community liaison, particularly due to the requirement of the use of roads for access. - Using local material should help reduce the transport distances. - Works undertaken in accordance with industry good practice measures, and health and safety regulations - Works carried out by suitably qualified personnel 	Yes	Yes - Considered to be managed to an acceptable level if all mitigation measures outlined are correctly implemented	N/A

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C3	Flooding of construction areas and/or site storage areas / compounds / welfare facilities	Working in a coastal setting or near to rivers / estuaries	<ul style="list-style-type: none"> - Severe weather event - In adequate temporary flood protection 	<ul style="list-style-type: none"> - Injury/loss of life - Distruption/damage to construction activities 	<ul style="list-style-type: none"> - Temporary works to prevent coastal waters interacting with work activities - Use of the Met Éireann weather warning alert service - The development of a robust plan to monitor and respond to tides and storm events 	Yes	Yes - Considered to be managed to an acceptable level if all mitigation measures outlined are correctly implemented	N/A
C4	Major pollution or sedimentation event affecting nearby designated sites	Working with fuels, oils, chemicals and cement within or in close proximity to an SAC, SPA, SSSI, MPA or NHA or pNHA	<ul style="list-style-type: none"> - Remobilisation of contaminated material into water column - Spill or leaks of oils or hydrocarbons from machinery or vessels - Vessel collision 	<ul style="list-style-type: none"> - Damage to marine environment 	<ul style="list-style-type: none"> - Construction Environmental Management Plan (CEMP) - Emergency Response Plan (ERP) should be included within the CEMP - A site-specific pre-construction Site Waste Management Plan (SWMP) - Concrete use and production shall adhere to control measures outlined in 	Yes	Yes - Considered to be managed to an acceptable level if all mitigation measures outlined are correctly implemented	N/A

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			<ul style="list-style-type: none"> - Extreme weather (rain, wind) - Employee negligence 		<p>Guidance for Pollution Prevention (GPP5): Works and maintenance in or near water.</p> <ul style="list-style-type: none"> - Follow requirements of best practice and relevant guidelines listed in the Netregs Guidelines for Pollution Prevention (GPP) - Where preferential surface flow paths occur, silt fencing or other suitable barriers will be used to ensure silt laden or contaminated surface runoff from the site does not discharge directly to a water body or surface water drain. - In the event that dewatering of foundations or drainage trenches is required during construction and/or discharge of surface water from sumps, a treatment system prior to the discharge will be used; silt traps, settlement skips etc. 			

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					<p>This measure will allow additional settlement of any suspended solids within storm water arising from the construction areas.</p> <ul style="list-style-type: none"> - Where possible, storage of materials shall be outside of the Rogerstown Estuary designation boundaries to reduce the risk of contamination from potential pollution events. - Beach renourishment should only occur following the construction of the fishtail groynes to reduce the potential dispersion of sediments to the wider marine environment. - Type and sources of construction materials – using clean local material should help reduce the risk of pollution during 			

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					<p>construction phase and reduce transport distances.</p> <ul style="list-style-type: none"> - The safe operation of refuelling activities shall be in accordance with PPG 7 “Safe Storage – The safe operation of refuelling facilities”. - Fuel, oil and chemical storage will be sited on an impervious base within a bund and secured. The base and bund walls must be impermeable to the material stored and of adequate capacity. The control measures in GPP2: Above Ground Oil Storage Tanks and PPG 26 “Safe storage – drums and intermediate bulk containers” will be implemented to ensure safe storage of oils and chemical. - A project specific Pollution Incident Response Plan will be 			

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					<p>prepared by the contractor consistent and will be in accordance with PPG 21 Pollution Incident Response Planning.</p> <ul style="list-style-type: none"> - Construction Phase Monitoring – records will be kept for each waste material which leaves the site, whether for reuse on another site, recovery, recycling or disposal. A system will be put in place to record the waste arising on site during the construction phase. - Works undertaken in accordance with industry good practice measures, and health and safety regulations - Works carried out by suitably qualified personnel 			

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C5	Accident to construction workers due to machinery or heavy lift failure	Working with heavy construction machinery for construction of flood wall, embankments and groynes	<ul style="list-style-type: none"> - Machinery failure - Severe weather event 	Injury/loss of life	<ul style="list-style-type: none"> - Construction Environmental Management Plan (CEMP) - Works undertaken in accordance with industry good practice measures, and health and safety regulations - Works carried out by suitably qualified personnel 	Yes	Yes - Considered to be managed to an acceptable level if all mitigation measures outlined are correctly implemented	N/A
C6	Accident involving the general public in the vicinity of construction works	Working in close proximity to pathways, public roads, properties and the beach.	<ul style="list-style-type: none"> - Vessel collision - Severe weather event - Inadequate security or safety fencing 	Injury/loss of life	<ul style="list-style-type: none"> - Safety fencing - Pedestrian management measures are proposed to be in place on the beach - A Construction Traffic Management Plan (CTMP) 	Yes	Yes - Considered to be managed to an acceptable level if all mitigation measures outlined are correctly implemented	N/A

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C7	Man overboard during beach renourishment	Working in a marine setting	<ul style="list-style-type: none"> - Vessel collision - Severe weather event - Slip, trips or falls 	Injury/loss of life	<ul style="list-style-type: none"> - Robust plan to monitor and respond to tides and storm events - Works undertaken in accordance with industry good practice measures, and health and safety regulations - Works carried out by suitably qualified personnel - A mooring point to allow for the safe mooring of the dredger over all states of the tide <ul style="list-style-type: none"> - CEMP 	Yes	Yes - Considered to be managed to an acceptable level if all mitigation measures outlined are correctly implemented	N/A

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C8	Severe weather conditions leading to storm surges, high tides and large waves affecting construction areas	Working in a coastal or estuarine setting	- Severe weather event	<ul style="list-style-type: none"> - Injury/loss of life - Damage to infrastructure 	<ul style="list-style-type: none"> - Temporary works to prevent coastal waters interacting with work activities - Use of the Met Éireann weather warning alert service - Robust plan to monitor and respond to tides and storm events - A mooring point to allow for the safe mooring of the dredger over all states of the tide 	Yes	Yes - Considered to be managed to an acceptable level if all mitigation measures outlined are correctly implemented	N/A

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C9	Piling activities causing damage to the soil structure leading to an accident involving land slippage or sinking.	Drilling for piles in unstable soils	<ul style="list-style-type: none"> - Contractor error - Operator error - Slip, trips or falls - Severe weather event - Unforeseen structural weakness 	<ul style="list-style-type: none"> - Injury/loss of life - Damage to the marine environment 	<ul style="list-style-type: none"> - Establish a stable working platform from which the piling rig can operate - Works undertaken in accordance with industry good practice measures, and health and safety regulations - Works carried out by suitably qualified personnel <ul style="list-style-type: none"> - CEMP 	Yes	Yes - Considered to be managed to an acceptable level if all mitigation measures outlined are correctly implemented	N/A
C10	Fire/explosion	Working with machinery, fuels, oils, chemicals and cement	<ul style="list-style-type: none"> - Vessel collision - Engine failure 	<ul style="list-style-type: none"> - Injury/loss of life - Damage to marine environment - Damage to infrastructure 	<ul style="list-style-type: none"> - Fuel, oil and chemical storage will be sited on an impervious base within a bund and secured. The base and bund walls must be impermeable to the material stored and of adequate capacity. The control measures in GPP2: Above Ground Oil Storage Tanks and PPG 26 "Safe storage – drums and intermediate bulk containers" will 	Yes	Yes - Considered to be managed to an acceptable level if all mitigation measures outlined are correctly implemented	N/A

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					<p>be implemented to ensure safe storage of oils and chemical.</p> <ul style="list-style-type: none"> - Works undertaken in accordance with industry good practice measures, and health and safety regulations - Works carried out by suitably qualified personnel 			
O1	Major Vessel Collision/Allision during periodic beach renourishment	Working within existing ferry operation routes and/or leisure areas (e.g., sea kayaking and other water sports).	<ul style="list-style-type: none"> - Operator or system error - Navigational error - Severe weather - Engine failure 	<ul style="list-style-type: none"> - Injury/loss of life - Damage to marine environment from leaked oil /fluids - Damage to infrastructure 	<ul style="list-style-type: none"> - The development of a robust plan to monitor and respond to tides and storm events. <ul style="list-style-type: none"> - Community liaison - A mooring point to allow for the safe mooring of the dredger over all states of the tide. - Works undertaken in accordance with industry good practice measures, and health and safety regulations 	Yes	Yes - Considered to be managed to an acceptable level if all mitigation measures outlined are correctly implemented	N/A

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					<ul style="list-style-type: none"> - Works carried out by suitably qualified personnel 			
O2	Major pollution or sedimentation event affecting nearby designated sites during periodic beach renourishment	Working with fuels, oils, chemicals and cement within or in close proximity to an SAC, SPA, SSSI, MPA or NHA or pNHA	<ul style="list-style-type: none"> - Remobilisation of contaminated material into water column - Spill or leaks of oils or hydrocarbons from machinery or vessels - Vessel collision - Extreme weather (rain, wind) 	Damage to the marine environment	<ul style="list-style-type: none"> - Emergency Response Plan (ERP) - Follow requirements of best practice and relevant guidelines listed in the Netregs Guidelines for Pollution Prevention (GPP) - The safe operation of refuelling activities shall be in accordance with PPG 7 "Safe Storage – The safe operation of refuelling facilities". - Fuel, oil and chemical storage will be sited on an impervious base within a bund and secured. The 	Yes	Yes - Considered to be managed to an acceptable level if all mitigation measures outlined are correctly implemented	N/A

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			- Employee negligence		<p>base and bund walls must be impermeable to the material stored and of adequate capacity. The control measures in GPP2: Above Ground Oil Storage Tanks and PPG 26 "Safe storage – drums and intermediate bulk containers" will be implemented to ensure safe storage of oils and chemical.</p> <ul style="list-style-type: none"> - A project specific Pollution Incident Response Plan will be prepared by the contractor consistent and will be in accordance with PPG 21 Pollution Incident Response Planning. - Works undertaken in accordance with industry good practice measures, and health and safety regulations - Works carried out by suitably qualified personnel 			

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O3	Severe weather conditions leading to storm surges, high tides and large waves	Working in a coastal setting or near to rivers / estuaries	- Severe weather event	<ul style="list-style-type: none"> - Injury/loss of life - Damage to infrastructure 	<ul style="list-style-type: none"> - Temporary works to prevent coastal waters interacting with work activities - Use of the Met Éireann weather warning alert service - Robust plan to monitor and respond to tides and storm events 	Yes	Yes - Considered to be managed to an acceptable level if all mitigation measures outlined are correctly implemented	N/A

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O4	Man overboard during periodic beach renourishment	Working in a marine setting	<ul style="list-style-type: none"> - Vessel collision - Severe weather event - Slip, trips or falls 	Injury/loss of life	<ul style="list-style-type: none"> - Robust plan to monitor and respond to tides and storm events - Works undertaken in accordance with industry good practice measures, and health and safety regulations - Works carried out by suitably qualified personnel - A mooring point to allow for the safe mooring of the dredger over all states of the tide 	Yes	Yes - Considered to be managed to an acceptable level if all mitigation measures outlined are correctly implemented	N/A
O5	Major traffic collision	Movement of inspection and maintenance vehicles to and from site and working in close proximity to buildings roads etc.	<ul style="list-style-type: none"> - Contractor error - Operator error - Severe weather event - Unforeseen structural weakness 	<ul style="list-style-type: none"> - Injury/loss of life - Potential for damage to transport infrastructure and disruption to transport - Potential to discharge deleterious material (e.g. fuel) to watercourses 	<ul style="list-style-type: none"> - Inspections and transport of supporting equipment for beach renourishment will be undertaken in accordance with industry good practice measures, and health and safety regulations, by suitably qualified professionals. 	No	Yes - Considered to be managed to an acceptable level if all mitigation measures outlined are correctly implemented	N/A

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O6	Severe flood event	Working in a coastal setting or near to rivers / estuaries	<ul style="list-style-type: none"> - Severe weather event - Unforeseen instability 	<ul style="list-style-type: none"> - Injury/loss of life - Damage to marine environment - Damage to Infrastructure - Displacement of community receptors 	<ul style="list-style-type: none"> - Proposed new groynes, beach renourishment and flood defences - Works undertaken in accordance with industry good practice measures - Works carried out by suitably qualified personnel. - Monitoring and maintenance of flood defences - Use of the Met Éireann weather warning alert service 	Yes	Yes - Considered to be managed to an acceptable level if all mitigation measures outlined are correctly implemented	N/A

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					<ul style="list-style-type: none"> - Robust plan to monitor and respond to tides and storm events 			
O7	Fire/explosion	Working with machinery, fuels, oils and chemicals	<ul style="list-style-type: none"> - Vessel collision - Engine failure 	<ul style="list-style-type: none"> - Injury/loss of life - Damage to marine environment - Damage to infrastructure 	<ul style="list-style-type: none"> - Fuel, oil and chemical storage will be sited on an impervious base within a bund and secured. The base and bund walls must be impermeable to the material stored and of adequate capacity. The control measures in GPP2: Above Ground Oil Storage Tanks and PPG 26 "Safe storage – drums and intermediate bulk containers" will be implemented to ensure safe storage of oils and chemical. 	Yes	Yes - Considered to be managed to an acceptable level if all mitigation measures outlined are correctly implemented	N/A

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