



Western Basin Dredging and Disposal Hazard and Risk Assessment Risk Register

Item	Activity Description	Potential Consequences	Current Risk Rating			Additional Control Strategy	Risk Rating After Additional Control		
			Consequence	Likelihood	Rating		Consequence	Likelihood	Rating
1	Dredging operations - falling into water	Potential for injury/fatality	5	2	Medium	Project specific training, no staff working during extreme weather conditions. To include in Dredging Environmental Management Plan (EMP) and Construction Safety Management Plan (CSMP)	5	1	Medium
2	Dredging operations - machine/plant/personnel falling into water during construction	Potential for injury/fatality damage to equipment and environment	5	2	Medium	Reputable dredging contractor. To include in Dredging EMP and CSMP	5	1	Medium
3	Bund - machine/plant/personnel swept into water	Potential for injury/fatality damage to equipment and environment, financial loss and time delay	5	2	Medium	Project specific training, no staff working during extreme weather. To include in CSMP	5	1	Medium
4	Bund -personal being hit by equipment	Potential for injury/fatality	5	3	High	Project specific training, stricter regulation implementation. To include in CSMP	5	1	Medium



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5	Bund - collisions between mobile equipments	Potential for injury/fatality, financial loss	5	3	High	Implement training and traffic control To include in CSMP	4	2	Medium
6	Dredging operations - collisions between Project and third party vessels	Potential for injury/fatality, environmental, financial loss, reputation	5	3	High	Reputable dredging contractor, communication between vessels, public awareness. To include in Dredging EMP and CSMP	5	2	Medium
7	Dredging operations - collision between multi Project vessels	Potential for injury/fatality, environmental, financial loss	5	3	High	Vessels maintained communication between vessels, reputable dredging contractor. To include in Dredging EMP and CSMP	5	1	Medium
8	Dredging operations - collision between Project vessels and mega fauna	Environmental - potential for injury/fatality to an animal, financial/time loss	3	3	Medium	Investigate local fauna movement patterns and plan dredging accordingly. To include in Dredging EMP and CSMP	3	2	Low
9	Bund -slips trips, falls and other workplace related issue	Potential for injury/fatality	5	3	High	Project specific training (all reasonable steps have been adopted). To include in CSMP	5	2	Medium



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10	Bund - potential for trapping/injury to animals	Environmental - potential for injury/fatality to an animal, financial/time loss	4	5	High	Removal of animals once bund is closed by a suitably trained person. To include in Construction EMP	4	3	Medium
11	Bund - potential for trap/injury to animals (protected species)	Environmental - potential for injury/fatality to an animal, financial/time loss	5	3	High	Removal of animals once bund is closed by a suitably trained person. To include in Construction EMP	3	3	Medium
12	Bund - injury/falling over board during relocation of animals	Potential for injury	3	3	Medium	Site specific training. To include in CSMP	3	2	Low
13	Dredging and bund - extreme weather conditions (cyclones) during outdoor work for site personnel	Exposure to elements, potential for injury/fatality	5	2	Medium	No site work To include in CSMP	1	1	Very Low
14	Dredging and bund - extreme weather conditions (cyclones) for on-site plant equipment/structures	Financial/time loss, potential environmental impact	4	2	Medium	Include in Construction and To include in Dredging EMP. To include in CSMP	4	2	Medium
15	Dredging & bund - extreme weather conditions (heat) during outdoor work	Exposure to elements, potential for injury/fatality	5	2	Medium	Site specific training To include in CSMP	5	1	Medium
16	Dredging & bund - potential for construction noise/vibrations to impact fauna	Interference with marine fauna	1	5	Medium	Adapt around fauna movements or adapt construction methodology. To include in Construction and	1	4	Low



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						Dredging EMP			
17	Piling associated with channel markers - potential noise/vibrations to impact fauna	Temporary avoidance or displacement of marine fauna	4	4	High	Adapt around fauna movements or adapt piling methodology warning shots. To include in Construction EMP	4	3	Medium
18	Dredging & bund - potential for construction noise/vibrations to impact site personnel	Potential injury, time loss	4	2	Medium	Site specific training	4	1	Low
19	Dredging operations - potential to impact benthic community due to pipeline (750-900 mm diameter, steel)	Removal or damage to benthos, possible need for off setting (financial loss)	3	3	Medium	Avoid sensitive habitats, align pipe line path in conjunction with ecologist. To include in Dredging EMP	2	3	Low
20	Dredging operations - capturing marine fauna into dredging equipment	Potential injury/fatality for marine fauna	4	4	High	Maintain fauna spotters and manage dredging operations to avoid fauna. Standard controls listed in Dredging EMP	4	2	Medium
21	Bund - silt plumes and damage to fauna/benthic communities	Potential to smother communities or reduce light availability	1	5	Medium	Management of tail water from reclamation To include in Construction EMP	1	5	Medium



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22	Bund - injury/drowning due to incoming tide	Potential for injury/fatality	5	2	Medium	Restrict access To include in CSMP	5	1	Medium
23	Dredging operations - silt plumes and damage to fauna/benthic communities	Potential to smother communities or reduce light availability, persistent plume moving into GBRMP (approximately 9 km from dredging area closest point)	4	4	High	Monitoring of plume over sensitive habitats with set trigger levels, separate studies in progress on hydrodynamic modelling and base line water quality. To include in Dredging EMP	4	3	Medium
24	Dredging operations & bund - operational phase displacement of local fisherman	Loss of fishing resources, potential financial compensation	1	1	Very Low	No additional control strategy	1	1	Very Low
25	Dredging operations - oil spills	Potential environmental impact, loss time and finance impacts	5	2	Medium	Management of works, reputable contractor. To include in Dredging EMP Notify Gladstone Port Corporation Emergency Controller for Oil Spills.	5	1	Medium



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26	Dredging operations - potential to introduce marine pests	Introduction of marine pests to port and or GBRMP, flow on effects to native marine communities/impact on fishing industries, financial loss, time delay	5	3	High	Marine pest assessment (in progress) / review of assessment immediately before dredging operations commence marine pest assessment of dredging vessels, reputable contractor. To include in dredging EMP	5	2	Medium
27	Operational phase - potential to introduce marine pests	Introduction of marine pests to port and or GBRMP via increased port usage, flow on effects to native marine communities/impact on fishing industries, financial loss	5	3	High	Western Basin area not established as first port of call for quarantine clearance of incoming vessels. Vessels to be of low risk before entering Western Basin area.	5	2	Medium
28	During construction phase of bund and dredging removal of sea grass meadows/habitat and fish habitat area	Loss of resources for protected species, fisheries and communities supported by these habitats, financial impacts for off setting	4	5	High	Offsetting- consider remediation/rehabilitating degraded environs.	2	5	Medium



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29	During construction phase of bund and dredging removal of mangroves	Loss of resources for protected species and fisheries, financial impacts for potential off setting	3	5	High	Offsetting- consider remediation/rehabilitating degraded environs.	2	5	Medium
30	Indirect impact on sea grass meadows and mangrove via changes to the hydrodynamic regime	Potential changes in community structure, loss of resources for protected species and fisheries, financial impacts for off setting	4	3	Medium	Hydrodynamic modelling (in progress)	3	3	Medium
31	Bund - oil spills from construction vehicles	Potential environmental impact	1	4	Low	Maintain vehicles routine inspections. To include in Construction EMP	1	2	Very Low
32	Dredging operations - potential of contaminants in dredging material	Impacts to human health, land use, release of contaminants into water, potential financial loss, leaching through bunds.	3	3	Medium	Undertake environmental investigations before commencing dredging. To include in Dredging EMP	3	2	Low



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33	Dredging operations - potential of ASS in dredging material	Impacts to human health, land use, release of contaminants into water, potential financial loss, leaching through bunds.	3	3	Medium	Undertake environmental investigations before commencing dredging. To prepare ASS Plan based on findings of the investigations.	3	2	Low
34	Discharge of pumping (dredged) material	Potential injury/fatality	5	3	High	Site specific training	5	2	Medium
35	Dredging operations - pipe line blockage by dredged material	Financial/time loss	1	3	Low	Reputable dredging contractor, regular maintenance of equipment and monitoring of dredged material flow	1	2	Very Low
36	Pipeline breaking and leaking dredge material	Potential time and financial loss, localised increase in sediment load, potential for smothering of benthic communities	3	3	Medium	Reputable Dredging contractor, Regular routine maintenance and inspection, Route pipeline in consultation with ecologist	3	2	Low
37	Dredging operations - third party recreational vessels and small commercial (fishing vessels) hitting pipe line	Potential injury/fatality, financial/time loss, damage to reputation	5	3	High	Public awareness, reputable dredging contractor. Install navigational marks on pipeline.	5	2	Medium



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38	Possible impact from vandalism of plant equipment	Potential injury/fatality, environmental impact, financial/time loss	5	1	Medium	Security measures, public awareness/community consultation/education	2	1	Very Low
39	Operational phase - increased vessel traffic	Increased boat strike or interaction with marine megafauna - potential harm or fatalities	4	3	Medium	Education of vessel operators, enforcement of speed limits	4	2	Medium
40	Operational phase - increased vessel traffic	Increased benthic disturbance due to prop wash	4	2	Medium	Education of vessel operators, enforcement of speed limits	4	1	Low
41	Operational phase - light spill from Western Basin facilities	Disorientation of marine fauna leading to inappropriate clustering of fauna at the site	5	2	Medium	Install lighting that reduces light spill, use marine fauna wattage lights (where safe), install motion sensors on lights and minimise lighting adjacent to the water.	5	1	Medium