

Core Criteria	Sub Criteria	IO1	IO2	IO3	Do Minimum	Reactive Maintenance
			Rock revetments at Bray Head (A) and rock headlands at Greystones North Beach (B1, B2 and B3) [58 – 95]	Rock revetments at Bray Head (A) and northern rock headlands at Greystones North Beach (B1, and B2) [47 – 77]	Rock revetments at Bray Head (A) [19 – 31]	
Economy	Land Use & Third Party Assets	No direct impact on private third party lands with this IO. Potential impact on Wicklow County Council land at Bray Head.	No direct impact on private third party lands with this IO. Potential impact on Wicklow County Council land at Bray Head.	No direct impact on private third party lands with this IO. Potential impact on Wicklow County Council land at Bray Head.	No impact on third party land and property as there would be no additional works not already being carried out by Irish Rail.	
	Capital expenditure	This is the most expensive implementation Option with costs required to provide all proposed measures required to 2075.	This implementation Option would result in initial costs associated with the Rock Revetments but no further interventions predicted until after 2050.	This implementation Option would result in relatively low costs in the short term, but further investment required by 2050, increasing cost while reducing economies of scale.	This implementation Option would include minimal capital costs.	
	Maintenance expenditure	Operational maintenance costs for this option should be relatively low. Some maintenance in the form of repositioning rocks may be required within the design life but this should be infrequent. Repair works could be undertaken from the beach with excavators mitigating the need for specialist or marine based plant.	Operational maintenance costs for this option should be relatively low. Some maintenance in the form of repositioning rocks may be required within the design life but this should be infrequent. Repair works could be undertaken from the beach with excavators mitigating the need for specialist or marine based plant. This implementation Option would require some monitoring and potential maintenance of the beach in areas where works are deferred.	This implementation Option would require some monitoring and potential maintenance of the beach in areas where works are deferred.	This implementation Option would rely on reactive maintenance, which would become more frequent and expensive over time.	
Safety	Health & Safety (Construction)	For this implementation Option the rock armour can be handled exclusively by proprietary marine equipment and should not require land based handling and transportation. The rock headlands will be constructed by land based equipment although some marine works will be required to transport the rock to the workforce.	For this implementation Option the rock armour can be handled exclusively by proprietary marine equipment and should not require land based handling and transportation. The rock headlands will be constructed by land based equipment, although some marine works will be required to transport the rock to the workforce. Less construction work required than for Implementation Option 1 and therefore, a higher construction health and safety score.	The rock revetments at Bray Head are the complex structures to construct due to access. Therefore, although this implementation Option involves less works than implementation Option 1 and implementation Option 2 the construction Health and Safety risk is similar as the risk associated with additional works for implementation Option 1 and implementation Option 2 is minimal. Also, there is a higher potential need for local remedial works in areas where works are deferred.	This implementation Option would result in localised remedial works being required with a mixture of marine and land based plant. Minor works of this nature would be risk assessed by the contractor. However these works may be undertaken under poor working conditions due to immediate risk to the railway.	
	Health & Safety (Design Life)	The rock armour revetments could pose a risk of people becoming trapped if they climb on the revetments. Warning signs should be installed to deter the public from climbing on the revetments. The rock revetments will be placed at the toe of the cliffs which will initially limit access along the beach due to the footprint of the revetments. In time the cliffs will erode either side of the revetments and then begin to outflank the revetments and in time erode the cliffs behind the revetments, albeit at a slower rate. As this happens, access along the beach will be created on the seaward side of the revetments. Maintenance of the revetments should be very limited and therefore maintenance related Health and Safety risks should be minimal. As the cliffs either side of the rock revetments will be left undefended there is potential for landslides in these areas as the cliffs erode and become undermined	The rock armour revetments could pose a risk of people becoming trapped if they climb on the revetments, however the extent of the revetments where this risk arises are less than that for implementation Option 1. Warning signs should be installed to deter the public from climbing on the revetments. The rock revetments will be placed at the toe of the cliffs which will initially limit access along the beach due to the footprint of the revetments. In time the cliffs will erode either side of the revetments and then begin to outflank the revetments and in time erode the cliffs behind the revetments, albeit at a slower rate. As this happens, access along the beach will be created on the seaward side of the revetments. Maintenance of the revetments should be very limited and therefore maintenance related Health and Safety risks should be minimal. As the cliffs either side of the rock revetments will be left undefended there is potential for landslides in these areas as the cliffs erode and become undermined	Under this implementation Option works on Greystones Beach are deferred to all immediate Health and Safety risks associated with the works and public on the beach are mitigated. However, this option would result in more erosion of the cliffs over the design life which could pose Health and Safety risks to public on the beach.	This implementation Option will involve reactive works such as placing rock armour at the toe of the cliffs to prevent further landslides. These works will not be planned or considered in a holistic way for the whole frontage and could result in limited access to certain parts of the frontage leading to increased potential for people becoming trapped or cut off by the tide	
Accessibility & Social Inclusion	Community	This implementation Option would place rock revetment at a number of locations along the coastline, as such reducing the beach amenity area.	This implementation Option would place rock revetment at a number of locations along the coastline, as such reducing the beach amenity area but to a lesser extent than implementation Option 1.	There will be no rock revetments along the Greystones beach area. However the level of coastal protection will be lower than for other options meaning the beach resource and the cliffs behind the beach will be more vulnerable to erosion	This implementation Option is considered to have some disadvantages as while any maintenance programmes currently taking place will continue under this scenario, occurrences of coastal erosion and / or damage or collapse of existing erosion measures will continue and potentially get worse in line with climate change predictions. The continuation of such coastal erosion has the potential to impact operational train services using the rail line in future years.	
	Access	While there will be the imposition of rock revetments along specific sections of the coastline of this CCA which will likely restrict access to and along the beach amenity area, the remaining beach amenity area will remain accessible as it is currently.	There will be some imposition of rock revetments along specific sections of the coastline of this CCA which will likely restrict access to and along the beach amenity area, the remaining beach amenity area will remain accessible as it is currently.	There will be no rock revetments along the Greystones beach area. However the level of coastal protection will be lower than for other options meaning the beach resource and the cliffs behind the beach will be more vulnerable to erosion	Do Minimum is considered to have some disadvantages as it will likely result, in time, of the eventual removal of the current access to the beach amenity area while also be detrimental to the Bray to Greystones Coastal Cliff Walk that runs behind it, ultimately leading to its eventual complete loss.	
	Social & Recreation Facilities	This implementation Option would place rock revetment at a number of locations along the coastline, as such reducing the beach amenity area.	This implementation Option would place rock revetment at a number of locations along the coastline, as such reducing the beach amenity area but to a lesser extent than implementation Option 1.	There will be no rock revetments along the Greystones beach area. However the level of coastal protection will be lower than for other options meaning the beach resource and the cliffs behind the beach will be more vulnerable to erosion	Do Minimum is considered to have some advantages as under this option there would be no effects on existing social & recreational facilities. However the effects of unmitigated climate change will eventually impact these resources.	
Integration	Compatibility with Development Plans	This implementation Option would include enhancement of the area with beach amenity and coastal recreation amenity and elements of green infrastructure. It aligns with high level coastal protection and coastal area management objectives within the development plans.	This implementation Option would include enhancement of the area with beach amenity and coastal recreation amenity and elements of green infrastructure. It requires less infrastructure on the beach area compared to implementation Option 1. It aligns with high level coastal protection and coastal area management objectives within the development plans.	This implementation Option would include enhancement of the area with beach amenity and coastal recreation amenity and elements of green infrastructure. It requires less infrastructure on the beach area and reduced areas of impact along the coast. However the level of coastal protection is lower than for other IOs.	Do Minimum would provide some disadvantages as coastal zone management and coastal area protection are identified as important within the relevant development plans. The disadvantage relating to this option is that as the minimum works rely on repairs it would not fully achieve the objectives of the plans. 'Patching up' existing infrastructure and not addressing long term climate issues doesn't address this.	
	Compatibility with Climate Adaptation Plans	This implementation Option would align with the Transport Climate Change Sectoral Action Plan in terms of protecting the coastline and transport assets. However this option would require significant volumes of rock and materials.	This implementation Option would align with the Transport Climate Change Sectoral Action Plan in terms of protecting the coastline and transport assets but would require some quantities of rock materials.	This implementation Option would not fully align with the Transport Climate Change Sectoral Action Plan in terms of protecting the coastline and transport assets as it would require further protection measures to be implemented by 2050.	Do Minimum would provide some disadvantages as coastal zone management and coastal area protection are identified as important within the relevant development plans. The disadvantage relating to this option is that the minimum works rely on repairs, not a full upgrade would not fully achieve the objectives of the plans which include the need for climate adaptation. The Climate Action Plan 2023 sets out under 15.3.6 the challenges related to the operation and resilience of the inter alia the rail network. There is a need to go beyond 'patching up' and to prepare for current and future change.	
	Compatibility with Transport Plans	This option will improve the protection of the rail line against climate change impacts, in line with the Transport Strategy's aim to "provide a sustainable, accessible and effective transport system for the Greater Dublin Area which meets the region's climate change requirements, serves the needs of urban and rural communities, and supports economic growth". The Greater Dublin Area Transport Strategy has Measure PT2 - Climate Proofing New Public Transport Infrastructure and Measure PT3 - Resilience of Public Transport Services. Both aims are met by this implementation Option by future proofing the Dublin to Wexford rail corridor by implementing coastal erosion measures. The Greater Dublin Area Cycle Network Plan proposes a National Cycle Route, the East Coast Trail, with an indicative route along part of the coastline south of Bray Head (CCAS-B). Providing the intervention works can accommodate the East Coast Trail, this option will support the Transport Strategy.	This option will improve the protection of the rail line against climate change impacts, in line with the Transport Strategy's aim to "provide a sustainable, accessible and effective transport system for the Greater Dublin Area which meets the region's climate change requirements, serves the needs of urban and rural communities, and supports economic growth". The Greater Dublin Area Transport Strategy has Measure PT2 - Climate Proofing New Public Transport Infrastructure and Measure PT3 - Resilience of Public Transport Services. Both aims are met by this implementation Option by future proofing the Dublin to Wexford rail corridor by implementing coastal erosion measures. The Greater Dublin Area Cycle Network Plan proposes a National Cycle Route, the East Coast Trail, with an indicative route along part of the coastline south of Bray Head (CCAS-B). Providing the intervention works can accommodate the East Coast Trail, this option will support the Transport Strategy.	This option will improve the protection of the rail line against climate change impacts, in line with the Transport Strategy's aim to "provide a sustainable, accessible and effective transport system for the Greater Dublin Area which meets the region's climate change requirements, serves the needs of urban and rural communities, and supports economic growth". The Greater Dublin Area Transport Strategy has Measure PT2 - Climate Proofing New Public Transport Infrastructure and Measure PT3 - Resilience of Public Transport Services. Both aims are met by this implementation Option by future proofing the Dublin to Wexford rail corridor by implementing coastal erosion measures. The Greater Dublin Area Cycle Network Plan proposes a National Cycle Route, the East Coast Trail, with an indicative route along part of the coastline south of Bray Head (CCAS-B). Providing the intervention works can accommodate the East Coast Trail, this option will support the Transport Strategy. Rail service has the potential to be disrupted in areas where works are deferred.	Do Minimum is expected to involve disruptions to public transport in the short to medium term to conduct repairs as the need arises. The ad hoc repairs will address damage that may occur, but won't build longer-term resilience against potential impacts of flooding or erosion. As per Do Nothing, this is likely to put increasing pressure on the public transport system and challenge its reliability, going against the Transport Strategy's focus on facilitating increased use of sustainable modes.	
Environment	Biodiversity	This implementation Option would have minimal impact on biodiversity/protected areas as there would be little/limited/targeted construction work. There are no Ramsar sites, one SAC (Bray Head SAC) within CCAS and one outside (Lambay Island), no SPA within CCAS and one SPA to the south SPA (The Murrough SPA being the closest), no NHA, one pNHA (Bray Head) that could be effected in a minor negative way. Repair works could cause damage and/or loss to QI habitats of the Bray Head SAC and loss of nesting habitat from gully works. Disturbance could be caused to the important sea bird colony and the SPA bird species of the nearby Murrough SPA and to a lesser extent marine mammals that are known to haul out in this area. Natural processes could be impacted through netting and changes in drainage but overall could progress relatively unconstrained.	This implementation Option would have minimal impact on biodiversity/protected areas as there would be little/limited/targeted construction work. There would be less impact with reduction of headlands.	This implementation Option would have minimal impact on biodiversity/protected areas as there would be little/limited/targeted construction work.	There would be limited/targeted construction work and therefore minimal impact on biodiversity/protected areas. There are no Ramsar sites, one SAC (Bray Head SAC) within CCAS and one outside (Lambay Island), no SPA within CCAS and one SPA to the south SPA (The Murrough SPA being the closest), no NHA, one pNHA (Bray Head) that could be effected in a minor negative way. Repair works could cause damage and/or loss to QI habitats of the Bray Head SAC and loss of nesting habitat from gully works. Disturbance could be caused to the important sea bird colony and the SPA bird species of the nearby Murrough SPA (whose QI bird species utilise this area) and to a lesser extent marine mammals (seals in particular) that are known to haul out in this area (these QI are designated features of Lambay Island SAC (designated for marine habitats (not impacted) and grey & harbour seals). Natural processes overall would progress relatively unconstrained.	
	Landscape, visual & Seascape	Intermittent use of rock revetments at specific locations would mitigate the loss of sections of beach, and generate headlands and bays that would contribute to the rugged and natural qualities of this section of coastline. With the intermittent use of rock revetments in this implementation Option it will generate an inconsistency along the coastline that is considered to be detrimental in terms of its impact on the character and visual qualities of this section of coastline. Implementation of the northern and southern rock headlands at Greystones North Beach only occurs over a short section of coastline (around 800m), io 1 and 2 are similar in terms of their impact. If constructed together then this would generate a greater unity of character and less impact of ongoing disruption and intervention.	Intermittent use of rock revetments at specific locations would mitigate the loss of sections of beach, and generate headlands and bays that would contribute to the rugged and natural qualities of this section of coastline. With the intermittent use of rock revetments in this implementation Option it will generate an inconsistency along the coastline that is considered to be detrimental in terms of its impact on the character and visual qualities of this section of coastline. Implementation of the northern and southern rock headlands at Greystones North Beach only occurs over a shorter section of coastline compared to implementation Option 1. However, if constructed together then this would generate a greater unity of character and less impact of ongoing disruption and intervention.	Delaying the works at Greystones beach has advantages in the short term in terms of impacts.	Continued reactive interventions would compromise the character and quality of this stretch of coastline and its amenity, with ongoing works generating adverse landscape/seascape and visual effects. Given the scale of this section of coastline and the elevation of visual receptors in locations away from the immediate edge, this ongoing state of repair and disruption is comparatively less impactful than in other parts of the coastline where it is experienced at grade and at closer proximity.	
	Archaeology, Architectural & Cultural Heritage	This implementation Option has a potential direct impact on one SMR Site (W008-011003; Midden) and one SMR Zone of Notification associated with (W008-011; Castle - unclassified, W008-011001; Moated site, W008-011002; Settlement deserted - medieval and W008-011003; Midden) have been identified. There is the potential for direct impacts to occur on previously unrecorded archaeological heritage. There is the potential for significant indirect setting and visual impacts to occur on four SMR sites (W008-011; Castle - unclassified, W008-011001; Moated site, W008-011002; Settlement deserted - medieval and W008-011003; Midden) and the associated Zone of Notification. There is the potential for indirect setting and visual impacts to occur on 2 RPS Sites (RPS ref 08-79).	There is the potential for direct impacts to occur on previously unrecorded archaeological heritage. There is the potential for indirect setting and visual impacts to occur on 2 RPS Sites (RPS ref 08-79).	There is the potential for direct impacts to occur on previously unrecorded archaeological heritage. There is the potential for indirect setting and visual impacts to occur on 2 RPS Sites (RPS ref 08-79).	Continued degradation, and piecemeal, reactive interventions, would generate a coastline that is in a constant state of repair and disruption, with constant adverse Archaeology, Architectural and Cultural Heritage effects.	
	Marine Archaeology	This implementation Option has no direct impacts on previously recorded wrecks, paleoenvironmental landscapes and material culture, and therefore no potential impact on archaeological features in the intertidal and marine elements. However, there will be a need for trans-shipment and marine delivery of large quantities of rock to the nearshore and there is a low risk of, and therefore no potential impact on archaeological features in the intertidal and marine elements.	This implementation Option has no direct impacts on previously recorded wrecks, paleoenvironmental landscapes and material culture, and therefore no potential impact on archaeological features in the intertidal and marine elements. However, there will be a need for trans-shipment and marine delivery of the rock to the nearshore and there is a low risk of, and therefore no potential impact on archaeological features in the intertidal and marine elements. This implementation Option scores higher than implementation Option 1 due to a reduction in the volume of rock necessary.	This implementation Option has no direct impacts on previously recorded wrecks, paleoenvironmental landscapes and material culture, and therefore no potential impact on archaeological features in the intertidal and marine elements. However, there will be a need for trans-shipment and marine delivery of the rock to the nearshore and there is a low risk of, and therefore no potential impact on archaeological features in the intertidal and marine elements. This implementation Option scores higher than implementation Option 1 and implementation Option 2 due to a reduction in the volume of rock necessary.	Do Minimum would provide some advantage as there would be limited/targeted construction and therefore no potential impact on archaeological features in the intertidal and marine elements.	
	Noise and Vibration	This implementation Options area of works are set back from population Noise Sensitive Locations with potential for any significant noise or vibration impacts. Likely require night-time works to work around tides. There may be periods of night-time works required. Overall works will be temporary at any affected NSL. This implementation Option has No long term operational noise or vibration impacts.	This implementation Options area of works are set back from population Noise Sensitive Locations with potential for any significant noise or vibration impacts. Likely require night-time works to work around tides. There may be periods of night-time works required. Overall works will be temporary at any affected NSL. The scale of works is lower than for implementation Option 1 and therefore, there will be less noise and vibration impacts due to construction. This implementation Option has No long term operational noise or vibration impacts.	This implementation Options area of works are set back from population Noise Sensitive Locations with potential for any significant noise or vibration impacts. Likely require night-time works to work around tides. There may be periods of night-time works required. Overall works will be temporary at any affected NSL. The scale of works is lower than for implementation Option 1 and implementation Option 2 and therefore, there will be less noise and vibration impacts due to construction. This implementation Option has No long term operational noise or vibration impacts.	Do Minimum would provide some advantages due to absence of temporary - short term noise and vibration impacts from any construction works. The existing maintenance works will continue as necessary which will be of neutral impact, albeit these will likely intensify in frequency. The long term operational scenario is neutral compared to other options, although the rail service will likely be less reliable and has potential for increased traffic on surrounding road network. Due to the longer term duration of potential impacts, this is weighted as less advantageous over other options.	

Core Criteria	Sub Criteria	IO1	Rock revetments at Bray Head (A) and rock headlands at Greystones North Beach (B1, B2 and B3) [58 – 95]	IO2	Rock revetments at Bray Head (A) and northern rock headlands at Greystones North Beach (B1, and B2) [47 – 77]	IO3	Rock revetments at Bray Head (A) [19 – 31]	Do Minimum	Reactive Maintenance
Core Criteria	Air Quality	Red	No operational phase impacts. This Implementation Option would facilitate operational phase reliance on public transport and reduce reliance on private vehicles for the long term. Potential for construction phase impacts associated and some construction vehicle emissions and dust emissions from revetment construction. Construction phase impacts would be likely considered short term and dust mitigation can be put in place.	Red	No operational phase impacts. This Implementation Option would facilitate operational phase reliance on public transport and reduce reliance on private vehicles for the long term. Potential for construction phase impacts associated and some construction vehicle emissions and dust emissions from revetment construction. Construction phase impacts would be likely considered short term and dust mitigation can be put in place. Due to reduced scale of works, this Implementation Option scores higher than implementation Option 1.	Green	No operational phase impacts. This option would facilitate operational phase reliance on public transport and reduce reliance on private vehicles for the long term. Potential for construction phase impacts associated and some construction vehicle emissions with less potential for dust generation compared to other options. Construction phase impacts would be likely considered short term and dust mitigation can be put in place.	Green	Lower or not significant construction phase impacts. General construction dust emissions and heavy machinery have the potential to be used for reactive do-minimum construction works, resulting sources of dust and air pollution. Potential for long term local operational phase impacts should the rail line be suspended in future. If rail services are suspended this has the potential to increase local road traffic.
	Carbon Management	Red	Of the Implementation Options, the Whole Life Carbon (tonnes CO2e) of this Implementation Option would be highest as it would require the full intervention of all measures now. This Implementation Option would facilitate operational phase reliance on public transport and reduce reliance on private vehicles for the long term.	Red	Of the Implementation Options, the Whole Life Carbon (tonnes CO2e) of this Implementation Option would be low as it would require the only partial intervention of all measures now. This option would facilitate operational phase reliance on public transport and reduce reliance on private vehicles for the long term.	Grey	Of the Implementation Options, the Whole Life Carbon (tonnes CO2e) of this Implementation Option would be low as it would require the only partial intervention of all measures now. This option would facilitate operational phase reliance on public transport and reduce reliance on private vehicles for the long term.	Red	The GHG emissions from embodied carbon is minimised due to no construction proposed in this IO. There is potential for long term local operational phase impacts should the rail line be suspended in future. If rail services are suspended this has the potential to increase local road traffic.
	Water Resources	Grey	Minimal impacts to groundwater as minimal below ground construction required	Grey	Minimal impacts to groundwater as minimal below ground construction required	Grey	Minimal impacts to groundwater as minimal below ground construction required	Green	Do Minimum would provide a significant advantage as it there would be minimal construction work and therefore negligible impact on groundwater.
	Geology and Soils	Red	Minimal/moderate disturbance to geological resources is expected as result of discontinuous rock revetment. Erosion of unprotected areas between the rock revetment sections may lead to long term impacts of geological resources.	Red	Minimal/moderate disturbance to geological resources is expected as result of discontinuous rock revetment. Requirement for rock will be less than that for implementation Option 1. Erosion of unprotected areas between the rock revetment sections may lead to long term impacts on geological resources.	Red	Minimal/moderate disturbance to geological resources is expected as result of discontinuous rock revetment. Erosion of unprotected areas between the rock revetment sections may lead to long term impacts on geological resources.	Red	There will be some advantages in the short term as a result of the minimal disturbance during the construction phase of the Scheme. However, the mitigation installed may not be sufficient to address erosion of geological resources caused by climate change.
	Material & Circular Economy	Red	This Implementation Option has a materials consumption score of 40.262t. The materials consumption score has been calculated based on the application of the Ellen MacArthur Foundation's Material Circularity Indicators (a value between 0 and 1 where higher values indicate a higher circularity) to the quantities of each material that is likely to be used in constructing the option. The Material Circularity indicator provides a measure of how circular / restorative the material flows of a material / product is likely to be.	Red	This Implementation Option has a reduced number of headlands compared to implementation Option 1 and therefore less volume of material required.	Grey	This Implementation Option requires less material than both implementation Option 1 and implementation Option 2.	Grey	Do Minimum would provide significant advantages as it minimises the consumption and use of material resources through maximising the use of existing assets to reduce the extent of any new construction required (i.e. during the current maintenance regime of ongoing monitoring and reactive repairs).
	Waste	Red	There should be minimal waste for all Implementation Options as there are no existing structures and all options involve works in front of the existing cliffs. However, this Implementation Option would generate the highest waste quantities.	Red	There should be minimal waste for all Implementation Options as there are no existing structures and all options involve works in front of the existing cliffs. However, the waste quantities for this Implementation Option would be significant.	Green	There should be minimal waste for all Implementation Options as there are no existing structures and all options involve works in front of the existing cliffs. In addition, no wastage is likely to be associated with constructing this IO.	Grey	Do Minimum minimises the generation and disposal of waste through maximising the use of existing assets to reduce the extent of any new construction required (i.e. during the current maintenance regime of ongoing monitoring and reactive repairs).
	Traffic and Transport	Green	This Implementation Option will have minimal operational impact expected to traffic & transport; the intervention works will be localised to the coast and are not anticipated to affect transport systems or travel demand. The protection measures will provide the highest protection to rail services.	Green	This Implementation Option will have minimal operational impact expected to traffic & transport; the intervention works will be localised to the coast and are not anticipated to affect transport systems or travel demand. The protection measures will provide excellent protection to rail services. This implementation Option scores slightly lower than implementation Option 1 due to the unlikely potential for disturbance in areas where works are deferred.	Green	This Implementation Option will have minimal operational impact expected to traffic & transport; the intervention works will be localised to the coast and are not anticipated to affect transport systems or travel demand. The protection measures will provide good protection to rail services. This implementation Option scores slightly lower than implementation Option 1 and implementation Option 2 due to the unlikely potential for disturbance in areas where works are deferred.	Red	This Implementation Option has potential unexpected disruptions to transport to make ad hoc repairs. Rail service impacts may lead to overcrowding on buses and/or increased road congestion.
	Engineering / Technical	Constructability	Red	Construction is relatively simple but would be slow. Several work fronts could be opened up to improve construction duration.	Red	This Implementation Option requires less rock armour. Construction is relatively simple but would be slow. Several work fronts could be opened up to improve construction duration. Lower level of construction compared to Implementation Option 1.	Red	This Implementation Option requires the least amount of rock armour although this option does include rock revetment in the more challenging locations.	Red
Rail service impact		Green	Minimal impact on operation of railway line.	Green	Minimal impact on operation of railway line.	Red	Lower standard of protection may result in railway operational impact due to wave overtopping. Likely future interventions required by 2050 increasing potential impacts on the railway.	Red	This Implementation Option is likely to require ad hoc and emergency works to the defences, which may impact rail operations. It will be difficult to plan ahead for these works as there will be no strategy in place for routine maintenance works.
Reliance on maintenance Maintenance burden		Green	This Implementation Option will require some additional monitoring of the areas between the rock headlands to monitor the rate of erosion in these locations.	Green	This Implementation Option will require some additional monitoring of the areas between the rock headlands to monitor the rate of erosion in these locations. This option scores slightly lower than Implementation Option 1 due to potential increased monitoring where works are deferred.	Grey	There may be the need for more maintenance where rock headlands work is deferred.	Red	This Implementation Option would rely heavily on monitoring and maintenance.
Adaptation		Grey	This Implementation Option has limited adaptability compared to other options as although the rock revetments can be added to or rebuilt if required, this would be limited.	Green	This Implementation Option has good adaptability compared to other options as the timing of the final headland can be adapted	Green	Future adaptation accounted for in the design, however deferring all of the works at CCASB will reduce the options for future adaptability	Red	This Implementation Option has minimal opportunities for adaptation.
Residual risk		Green	This Implementation Option has a slightly higher residual risk at the locations between the rock headlands where the rate of erosion of the coastline could vary.	Green	This Implementation Option has a slightly higher residual risk at the locations between the rock headlands where the rate of erosion of the coastline could vary. Deferral of works means there is an increased risk associated with coastal erosion when compared to implementation Option 1.	Red	Further deferral of works when compared to implementation Option 1 and implementation Option 2 means there is an increased risk associated with coastal erosion.	Red	Reactive measures could include small scale works to manage the risk, such as localised placement of rock armour.
Planning Risk	Consenting risk	Grey	This Implementation Option is in accordance with planning policy as it will protect the area for a longer time. Works are carried out in Natura 2000 site with potential for temporary and permanent impacts on qualifying interests which could invoke IROPI. Works will likely require a Maritime Area Consent.	Grey	This Implementation Option is in accordance with planning policy as it will protect the area for a longer time. Works are carried out in Natura 2000 site with potential for temporary and permanent impacts on qualifying interests which could invoke IROPI. Works will likely require a Maritime Area Consent.	Grey	This Implementation Option is in accordance with planning policy as it will protect the area for a longer time. Works are carried out in Natura 2000 site with potential for temporary and permanent impacts on qualifying interests which could invoke IROPI. Works will likely require a Maritime Area Consent.	Green	Do Minimum would provide a significant advantage as it would require no consents.