Core Criteria	Sub Criteria	IO1	Raise walls in all sub cells and add rock revetments [112 – 182]	IO2	Raise walls in all sub cells [54 – 87]	IO3	Raise walls in D and E [38 – 62]	Do Minimum	Reactive Maintenance
Economy	Land Use & Third Party Assets		No direct impact on private third party lands with this Implementation Option. Potential impact on Dun Laoghaire-Rathdown County Council land at Salthill and Monkstown Station.		No direct impact on private third party lands with this Implementation Option. Potential impact on Dun Laoghaire-Rathdown County Council land at Salthill and Monkstown Station.		No direct impact on private third party lands with this Implementation Option. Potential impact on Dun Laoghaire-Rathdown County Council land at Salthill and Monkstown Station.		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 needed.		This Implementation Option would result in initial costs associated with the provision of seawalls, but no further interventions predicted until 2075 at the earliest.		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 incur minimal capital costs
	Maintenance expenditure		This Implementation Option would only require a routine and post storm monitoring plan which would require occasional maintenance and repairs during its design life (e.g. concrete patch repairs).		This Implementation Option would only require a routine and post storm monitoring plan which would require occasional maintenance and repairs during its deign life (e.g. concrete patch repairs). However this option does not have the protection of rock revetments and so could require additional repair work.		This option could require additional maintenance in sub cells A to C as the overtopping rates increase		This Implementation Option would rely on reactive repairs and maintenance. Maintenance would be ad hoc and emergency repairs.
Safety	Health & Safety (Construction)		The rock armour can be handled exclusively by proprietary marine equipment and should not require land based handling and transportation. The revetment will be constructed by land based equipment although some marine works will be required to transport the rock to the workface. The stepped revetments and raised footways and new access locations will require extensive work on the existing revetments and raising works immediately adjacent to the railway.		It is envisaged that the majority of this work can be managed from landside with no marine work, plant or equipment required. However, there is potential for working in proximity to the railway.		It is envisaged that the majority of this work can be managed from landside with no marine work, plant or equipment required. However, there is potential for working in proximity to the railway. The extent of this works required is lowest for this option, however potential need for emergency repair work is higher.		This Implementation Option would result in localised remedial works being required. 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)		This option could pose some Health and Safety risks of people climbing on the rock revetments and becoming trapped. Warning signs should be installed to mitigate this. The revetments will significantly reduce the useable area of the beach which could lead to people becoming trapped by the tides. This can be mitigated through increased access points through the revetments.		This option has advantages as it does not include any rock revetments which could pose some Health and Safety risk during the design life but provides coastal protection up to 2075.		This option has advantages as it does not include any rock revetments which could pose some Health and Safety risk during the design life. This option would require further works over the design life of the project which would increase the Health and Safety risk. This option would also result in a higher SoP being provided in sub cells D and E compared to A-C which could lead to some Health and Safety risks		This option will involve maintaining the defences through reactive repairs. Therefore as there will be no proactive monitoring or maintenance, deterioration of the defences will occur and there are likely to be periods where there are Health and Safety risks in the defence prior to repair works being undertaken. The frequency and scale of the damage and repair works will increase over time. This option does not include any improvement or upgrades to the defences to account for climate change therefore increased overtopping and flooding of the railway line will occur over time which poses Health and Safety Risks
Accessibility & Social Inclusion	Community		While the placement of rock revetment along the majority of the coastline of this CCA is not considered to be positive in regard to improving the amenity value or public perception of the area, the provision of stepped revetment at Blackrock and Seapoint would provide enhanced amenity areas at this location, and thereby contribute positively to public perception and amenity value locally.		It is considered that this Implementation Option will minimise the potential effects on community and amenity as no rock revetment is required until 2075 at the earliest.		It is considered that this Implementation Option will minimise the potential effects on community and amenity as no rock revetment is required until 2075 at the earliest. However the lower level of protection has potential to impact the local community in the event of extreme storm events.		This Implementation Option is considered to have some disadvantages over other options as while any maintenance programmes currently taking place will continue under this scenario, occurrences of coastal flooding and / or damage collapse of existing flood defences will continue and potentially get worse in line with climate change predictions.
	Access		There will be the imposition of rock revetment along sections of the shoreline of this CCA, access steps will be incorporated into the revetment to ensure any formal and informal access points to the beach amenity area that currently exist and are used by members of the public are maintained. Access along the beach is likely to be considerably curtailed under this option however. Access to and along the beach at Blackrock and Seapoint will be maintained and improved.		It is considered that this Implementation Option will minimise the potential effects to beach/coastline access as no rock revetment is required until 2075 at the earliest.		It is considered that this Implementation Option will minimise the potential effects to access as no rock revetment is required until 2075 at the earliest.		Existing formal and informal accesses to the beach amenity area will not be altered and will remain as they are now. Long-shore access is also unlikely to be affected under this option. Do Minimum will cause access to and along the beach to be somewhat curtailed as a result of erosion events continue over time.
	Social & Recreation Facilities		This Implementation Option provides for enhanced amenity areas at Blackrock and Seapoint. However, the placement of rock revetment along the remaining length of coastline within this CCA will likely restrict the public's ability to use it for social and recreational activities.		It is considered that this Implementation Option will minimise the potential impacts on social and recreational activities as no rock revetment is required until 2075 at the earliest.		It is considered that this Implementation Option will minimise the potential effects to social and recreational activities as no rock revetment is required until 2075 at the earliest.		Do Minimum is considered to have some advantages over other Implementation Options because there would be no effects on existing social & recreational facilities (i.e. beach amenity areas) in this CCA. 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. The disadvantages relating to this option relate to the rock revetment extending into the beach area resulting in increased loss of the beach as an amenity, greater development area and therefore more potential impacts upon SPA/SAC and PNHA, etc. The raised sea wall has potential to impact on protected views and amenities within the DLRCC Development Plan.		This Implementation Option aligns with high level coastal protection and coastal area management objectives within the development plans. This Implementation Option also has significant advantages as it will not effect the beach in any way and therefore has less potential to impact upon SPA/SAC and PNHA, etc. However the raised sea wall has potential to impact on protected views and amenities within the DLRCC Development Plan.		This Implementation Option aligns with the coastal area management objectives within the development plans - however it provides a more limited extent of protection that may be vulnerable to more significant storm events. This Implementation Option also has significant advantages as it will not effect the beach in any way and therefore has less potential to impact upon SPA/SAC and PNHA, etc. However the raised sea wall has potential to impact on protected views and amenities within DLR development plan		Do Minimum would provide some disadvantages over other options 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 it would not fully achieve the objectives of the plans. DC Policy CA9 for example "Climate Adaptation in the Built Environment' sets out that proposals must demonstrate climate adaptation. 'Patching up' existing infra and not addressing long term climate issues doesn't address this.
	Compatibility with Climate Adaptation Plans		This Implementation Option would align generally with the Transport Climate Change Sectoral Adaptation Plan in terms of providing the best protection of the coastline and transport assets. However this Implementation Option would involve a significant volume of materials and transport of same. This Implementation Option provides the maximum level of coastal protection.		This Implementation Option would align generally with the Transport Climate Change Sectoral Adaptation Plan in terms of protecting the coastline and transport assets fully. However this Implementation Option would avoid the significant volume of materials and transport of same until after 2075		This Implementation Option would align generally the Transport Climate Change Sectoral Adaptation Plan in terms of protecting the coastline and transport assets, however protection would be less than other options. This Implementation Option would avoid the significant volume of materials and transport of same until after 2050		Do Minimum would provide some disadvantages over other Implementation Options 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 (Adaptation) 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 Implementation Option will provide the best 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 Cycle Network Plan proposes a National Cycle Route, the East Coast Trail, with an indicative route along the coastline throughout CCA1 from Merrion Gates to Dún Laoghaire. Providing the revetment is implemented with consideration of the East Coast Trail, this option will support the Transport Strategy.		This Implementation Option will significantly 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 Cycle Network Plan proposes a National Cycle Route, the East Coast Trail, with an indicative route along the coastline throughout CCA1 from Merrion Gates to Dún Laoghaire. Providing increased walls is implemented with consideration of the East Coast Trail, this option will support the Transport Strategy.		This Implementation Option will improve good 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 Cycle Network Plan proposes a National Cycle Route, the East Coast Trail, with an indicative route along the coastline throughout CCA1 from Merrion Gates to Dún Laoghaire. Providing the revetment is implemented with consideration of the East Coast Trail, this option will support the Transport Strategy. However, the level of protection is not as robust as for other IOs.		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 has a large footprint of the revetment located within valuable habitats. Night time working is likely to be required due to the tides which would cause some disturbances. There is one Ramsar site (Sandymount Strand/Tolka Estuary), one SAC (South Dublin Bay SAC) and several SPA (South Dublin and River Tolka Estuary SPA being the closest), one pNHA (Booterstown Marsh) and one pNHA (South Dublin Bay) that could be negatively affected. This option would have a direct negative impact on QI habitats of the South Dublin Bay SAC including loss of mud/sand flats which is widespread and is foraging habitat for South Dublin and River Tolka Estuary SPA QI bird species. Loss of fine sand Augulus tenuis community must be conserved in a natural condition, as stated in the Conservation Objectives for the SAC. A significant amount of rock armour would be needed for this option which would be transported by barge. Operational extension of the revetment to 9.2m would result in no direct loss of eel grass bed or reef QI habitat although works would be close geographically. Loss of muds may occur but would be minimal in the context of the area of this habitat type. Indirect impacts through changes in hydrology could occur.		This Implementation Option will avoid the large footprint of the revetment within sensitive habitats. Night time working is likely to be required due to need to avoid to impact operation of the railway. If works are confined to the railway footprint no impacts to SAC/SPA habitat through temp habitat disturbance. If small area needed for construction or access this would be a temp loss impact. Night works will cause disturbance to roosting birds. Potential for pollution impacts.		This Implementation Option will have the smallest footprint of the revetment within sensitive habitats. Night time working is likely to be required due to need to avoid to impact operation of the railway. If works are confined to the railway footprint no impacts to SAC/SPA habitat through temp habitat disturbance. If small area needed for construction or access this would be a temp loss impact. Night works will cause disturbance to roosting birds. Potential for pollution impacts.		There would be limited/targeted construction work and therefore minimal impact on biodiversity/ protected areas. Upgrade works would prevent potential pollution events. There is one Ramsar site (Sandymount Strand/Tolka Estuary), one SAC (South Dublin Bay SAC) and several SPA (South Dublin and River Tolka Estuary SPA being the closest), one HNA (Booterstown Marsh) and one pNHA (South Dublin Bay) that could be effected in a minor negative way. Repair works could cause disturbance to QI bird species for example. If unhindered, the natural process of spit expansion will provide supporting habitat for SPA bird species of the South Dublin and River Tolka Estuary SPA and may provide protection to eel grass bed QI habitat of the South Dublin Bay SAC in vicinity and which is relatively discrete in nature and thus of greater importance if impacted. Limited impacts to other QI from construction are likely. Nature process overall would progress mainly unconstrained.
	Landscape, visual & Seascape		This Implementation Option has the potential to retain much of the existing landscape, visual and seascape at Blackrock and Seapoint as this option replaces current provision on a like for like basis, but everything is raised in elevation. However, this option requires the installation of a revetment along much of the frontage with increased wall heights, particularly along the railway line. The revetment combined with the raised walls may have a higher visual impact on beach, marine and rail users.		This Implementation Option has the potential to retain the existing landscape, visual and seascape at Blackrock and Seapoint as this option replaces current provision on a like for like basis, but everything is raised in elevation. The new works will be more aesthetically coherent and pleasing. However, this option requires increased wall heights in all sub cells, particularly along the railway line, which may have a higher visual impact on rail users. Holistic treatment of this section and the reduction in ongoing disruption along this high amenity stretch of coastline whilst pushing out the low-priority rock revetement work		This Implementation Option has the potential to retain the existing landscape, visual and seascape at Blackrock and Seapoint as this option replaces current provision on a like for like basis, but everything is raised in elevation. The new works will be more aesthetically coherent and pleasing. However, this option requires increased wall heights in all sub cells, particularly along the railway line, which may have a higher visual impact on rail users. Holistic treatment of this section and the reduction in ongoing disruption along this high amenity stretch of coastline whilst pushing out the low-priority rock revetement work.		Continued degradation, and piecemeal, reactive interventions, would compromise the character and quality of this frontage and its amenity. Continued and ongoing works would generate a coastline that is in a constant state of repair and disruption, with constant adverse landscape/seascape and visual effects.
	Archaeology, Architectural & Cultural Heritage		This Implementation Option has no potential direct impacts on Recorded Monuments or SMR Sites, however, there is the potential for direct impacts to occur on previously unrecorded archaeological heritage, particularly from the placement of the revetment over the existing historical seawall. There is the potential for significant indirect setting and visual impacts to occur on two SMR sites (DU023-009; Ritual Site - Holy Well and DU023-010; Martello Tower). There is the potential for indirect setting and visual impacts to occur on 115 RPS Sites		This Implementation Option has no potential direct impacts on Recorded Monuments or SMR Sites and 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 two SMR sites (DU023-009; Ritual Site - Holy Well and DU023-010; Martello Tower). There is the potential for indirect setting and visual impacts to occur on 115 RPS Sites		This Implementation Option has no potential direct impacts on Recorded Monuments or SMR Sites and no 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 two SMR sites (DU023-009; Ritual Site - Holy Well and DU023-010; Martello Tower). There is the potential for indirect setting and visual impacts to occur on 115 RPS Sites		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		There are two recorded wrecks (ID WO1960 and WO1961). This Implementation Option does not involve any construction works offshore and therefore there are no direct impacts on previously unrecorded wrecks, paleoenvironmental landscapes and material culture. 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 potential impact on archaeological features in the intertidal and marine elements.		There are two recorded wrecks (ID WO1960 and WO1961). This Implementation Option does not involve any works offshore and therefore there are no direct impacts on previously unrecorded wrecks, paleoenvironmental landscapes and material culture, and therefore no potential impact on archaeological features in the intertidal and marine elements. Furthermore there will be no delivery of rock required.		There are two recorded wrecks (ID WO1960 and WO1961). This Implementation Option does not involve any works offshore and therefore there are no direct impacts on previously unrecorded wrecks, paleoenvironmental landscapes and material culture, and therefore no potential impact on archaeological features in the intertidal and marine elements. Furthermore there will be no delivery of rock required.		There are two recorded wrecks (ID WO1960 and WO1961). 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		All impacts are temporary to short-term. No long term operational noise or vibration impacts. Noise impact will be from mobile plant when working in proximity to Noise Sensitive Locations . Specific instances of elevated noise will be localised and temporary. There may be periods of night-time works required. No significant vibration impacts from this proposal.		All impacts are temporary to short-term. No long term operational noise or vibration impacts. Noise impact will be from mobile plant when working in proximity to Noise Sensitive Locations however the fact that there will be no revetments constructed means that impacts are reduced. Specific instances of elevated noise will be localised and temporary. There may be periods of night-time works required. No significant vibration impacts from this proposal.		All impacts are temporary to short-term. No long term operational noise or vibration impacts. Noise impact will be from mobile plant when working in proximity to Noise Sensitive Locations however the fact that there will be no revetments constructed means that impacts are reduced. Specific instances of elevated noise will be localised and temporary. There may be periods of night-time works required. No significant vibration impacts from this proposal. There would be minimal operational phase impacts. However, this option provides a lower level of protection to the railway infrastructure which means that any coastal failure could result in effects on the provision of rail services. This would result in higher emissions during any cancellation or reduction to rail services.		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. However , the long term operational scenario 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
	Air Quality		There will be some construction phase impacts associated with potentially dusty activities and construction vehicle emissions but these would be short term and dust mitigation can be put in place. It is assumed that rock will be delivered by marine plant. There would be minimal operational phase impacts, with the assumption that maintenance requirement is low. This option would facilitate operational phase reliance on public transport and reduce reliance on private vehicles for the long term.		There will be no significant construction phase impacts associated with potentially dusty activities and construction vehicle emissions will be much reduced compared to the provision of rock revetments. There would be minimal operational phase impacts, with the assumption that maintenance requirement is low. This option would facilitate operational phase reliance on public transport and reduce reliance on private vehicles for the long term.		There will be no significant construction phase impacts associated with potentially dusty activities and construction vehicle emissions will be much reduced compared to the provision of rock revetments. There would be minimal operational phase impacts. However, this option provides a lower level of protection to the railway infrastructure which means that any coastal failure could result in effects on the provision of rail services. This would result in higher emissions during any cancellation or reduction to rail services. This option would facilitate operational phase reliance on public transport and reduce reliance on private vehicles for the long term.		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.

Core Criteria	Sub Criteria	IO1	Raise walls in all sub cells and add rock revetments [112 – 182]	IO2	Raise walls in all sub cells [54 – 87]	IO3	Raise walls in D and E [38 – 62]	Do Minimum	Reactive Maintenance
	Carbon Management		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 option would facilitate operational phase reliance on public transport and reduce reliance on private vehicles for the long term.		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.		Of the Implementation Options, the Whole Life Carbon (tonnes CO2e) of this Implementation Option would be lowest 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. However, this option provides a lower level of protection to the railway infrastructure which means that any coastal failure could result in effects on the provision of rail services. This would result in higher emissions during any cancellation or reduction to rail services.		This Implementation Option has significant disadvantages over other options due to the 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		Minimal impacts to groundwater as minimal below ground construction required.		Minimal impacts to groundwater as minimal below ground construction required.		Minimal impacts to groundwater as minimal below ground construction required.		Do Minimum would provide a significant advantage as it there would be minimal construction work and therefore negligible impact on groundwater
	Geology and Soils		Rock revetment will cause minimal/moderate disturbance to geological resources and areas of potential contamination during the construction at CCA1-A to CCA1-D.		Less disturbance anticipated as the proposed works involve building over the existing defence with no significant impact on the existing ground.		Less disturbance anticipated as the proposed works involve building over the existing defence with no significant impact on the existing ground.		There will be some advantages in the short term as a result of the minimal disturbance to geological resources during the construction phase of the Scheme. However, the mitigation installed may be not be sufficient to address erosion of geological resources caused by climate change.
	Material & Circular Economy		This option will require a significant volume of material		No rock revetment required, so much reduced material volumes.		No rock revetment required, so much reduced material volumes.		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		Minimal waste would be generated from the removal of existing structures (new revetments will be constructed over the existing structures). Some removal of existing concrete walkways in sub cell D and E may be required to enable construction of the revetments. These walkways are in a relatively poor state already and beyond the end of their design life.		No rock revetment required, so much reduced waste volumes. Some removal of existing concrete walkways and/or walls may be required to enable the higher wall heights to be installed		No rock revetment required, so much reduced waste volumes. Some removal of existing concrete walkways and/or walls may be required to enable the higher wall heights to be installed		Do Minimum would provide advantages as it 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		This option will have minimal operational impact on 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 maximum protection to rail services		This option will have minimal operational impact on 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 option will have minimal operational impact on 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 option has some disadvantages compared to other options due to the 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		Extensive rock revetment works required which would necessitate difficult marine access/working for material delivery and construction. Concrete works at Seapoint will result in more interfaces to manage through construction. Limited space for constructing the raised rear seawall and raised footpath.		Removal of extensive rock works simplifies material delivery and tidal working constraints. Limited space for constructing the raised seawalls.		Removal of extensive rock works simplifies material delivery and tidal working constraints. Limited space for constructing the raised seawalls. Likely future interventions required by 2050, requiring 2nd round of works adjacent to the railway.		This option is likely to require ad hoc emergency repairs to the defences which could be more complex than planned protection works
	Rail service impact		Possible impact on railway during the construction of the back wall at Seapoint. Some potential impact during the wall raisings and stepped revetment.		Possible impact on railway during the construction of the back wall at Seapoint. Some potential impact during the wall raisings and stepped revetment.		Possible impact on railway during the construction of the back wall at Seapoint. Some potential impact during the wall raisings and stepped revetment. 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.		This option is likely to require ad hoc and emergency works to the wall alongside the railway, 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. Increasing disruption to services during wave overtopping events.
	Reliance on maintenance Maintenance burden		This option should require minimal maintenance to the existing assets but the new rock revetments will need to be maintained.		This option may require some additional maintenance as rock revetments will not be in place to protect the walls or existing revetment.		This option may require significant additional maintenance as rock revetments will not be in place to protect the walls or existing revetement with lowest level of protection. There may be the need for more maintenance where the walls are not raised until 2050.		This option would rely heavily on monitoring and maintenance
	Adaptation		Future adaptation of this option is limited as changes to the rock revetments would be complex and any additional raising of the wall behind the revetments would be challenging. Raising of the stepped revetments in CCA1-D and E could be undertaken through raising the wave walls but options would be limited		Future adaptation accounted for in the design by leaving the option open for adding a new rock revetment in the future.		Future adaptation accounted for in the design by leaving the option open for adding a new rock revetment in the future.		This Implementation Option has minimal opportunities for adaptation.
	Residual risk		This option would use new hard engineering to manage risk, with less reliance on a beach (which could be stripped out quickly in a significant event). If the new defence was compromised, failure could be rapid.		Some residual risk exists as the existing revetments will not be protected		Residual risk exists as the existing revetments will not be protected and some wall raising works are deferred leading to increased risk of wave overtopping.		This option would not eliminate weaknesses in the existing hard defence, which could lead to rapid failure.
Planning Risk	Consenting risk		This option has potential to be difficult to get consent in the absence of IROPI.		This option will not entail elements within European sites and so consenting risk will be reduced.		This option will not entail elements within European sites and so consenting risk will be reduced. As the extent of this works will cause the lowest environmental impacts, the consenting risks here are lowest. However there will be a requirement for future consents, likely by 2050.		Do Minimum would provide a significant advantage as it would require no consents.