

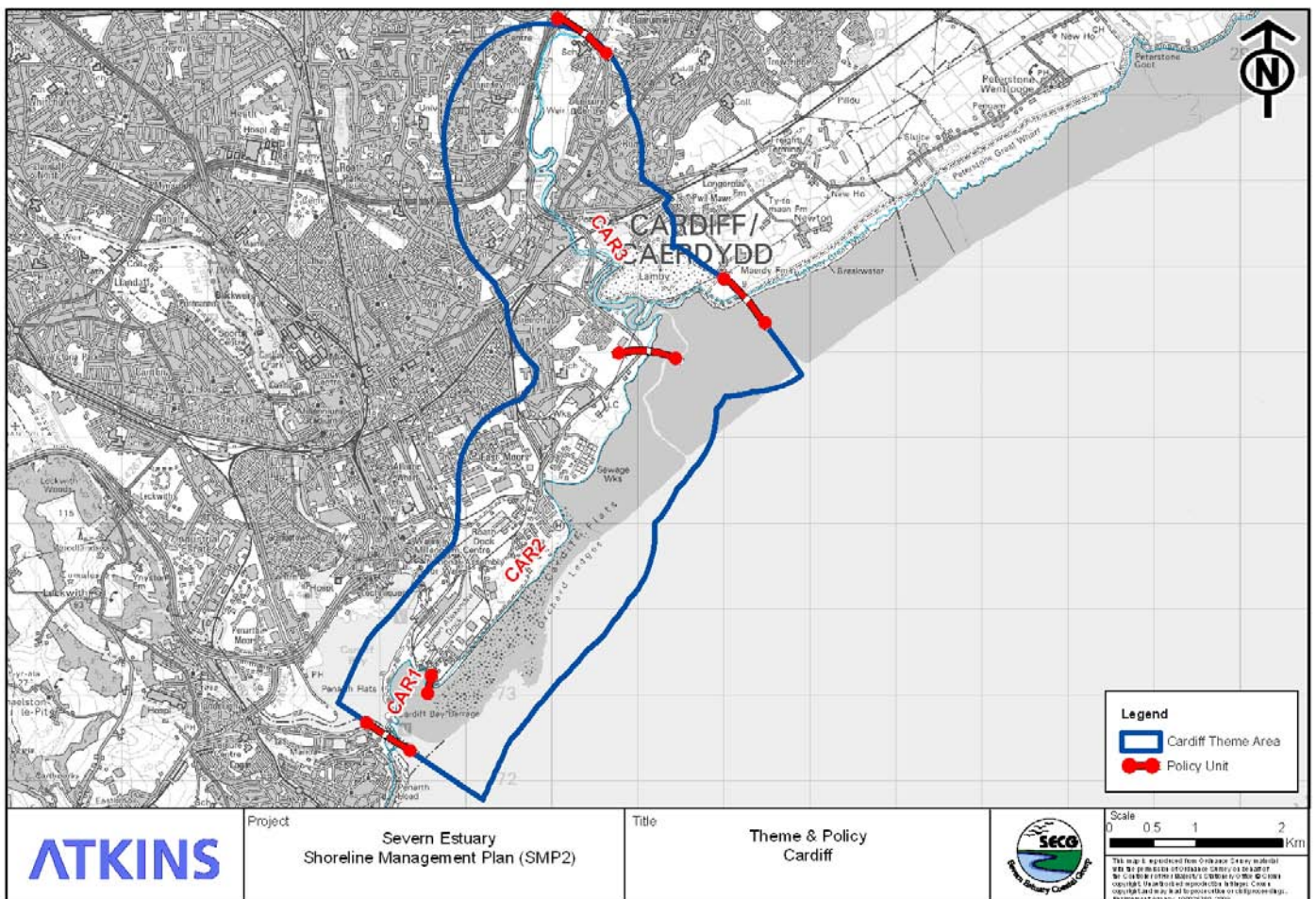
CARDIFF

This Theme area contains the Policy Units **CAR 1**, **CAR2** and **CAR 3**.

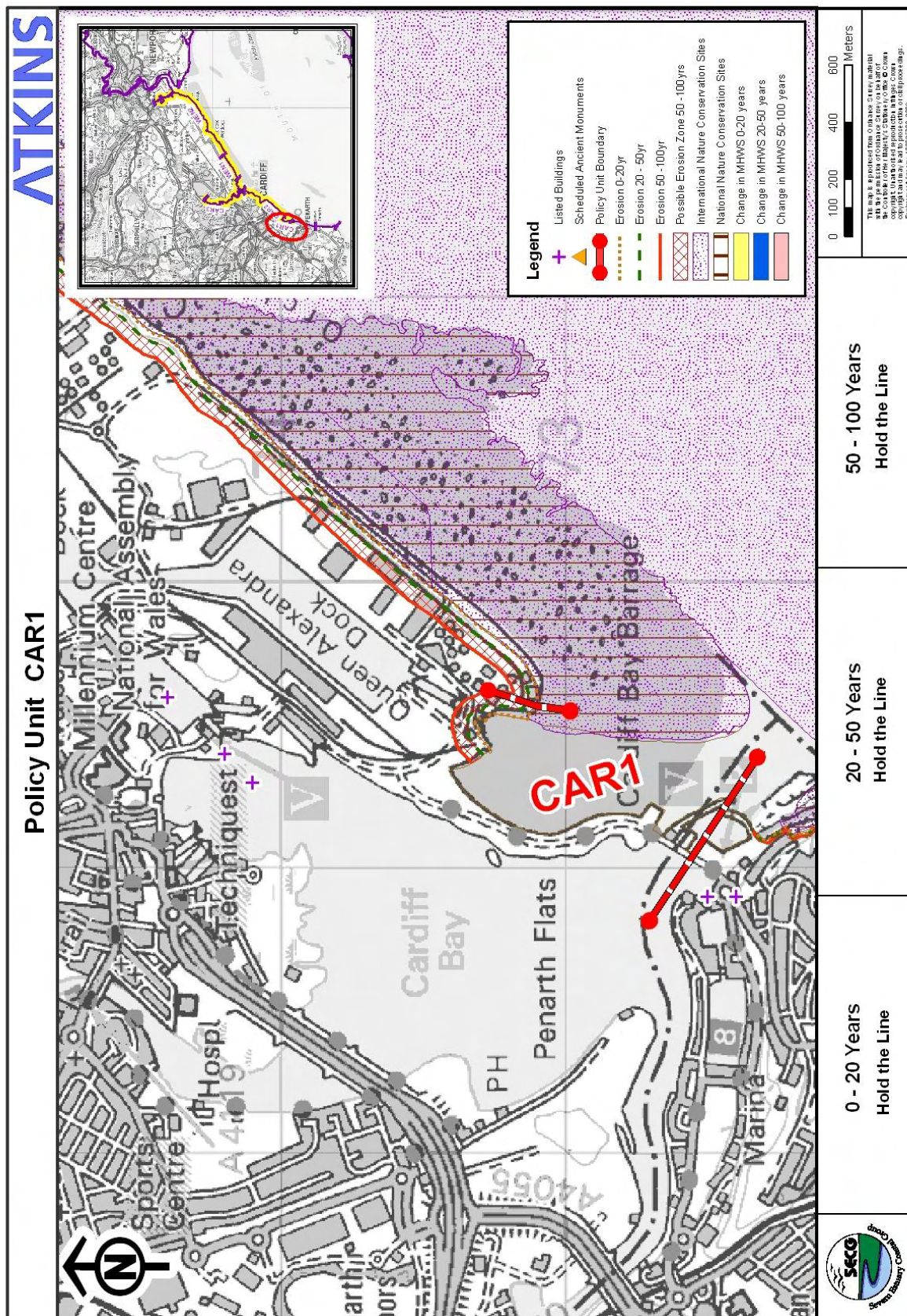
It starts at **Penarth Head** on the west shoreline of the Severn Estuary, in the Vale of Glamorgan, Wales and end at **Lamby Way Landfill Site drain/outfall**.

The **Key Policy Drivers** in this area are:

- International nature conservation sites – Severn Estuary SAC, SPA and Ramsar;
- Critical infrastructure – railway line, electricity substations, docks;
- Residential developments – Cardiff;
- Industrial and commercial developments – Cardiff Bay, docks;
- All Wales Coastal Path routes.



Policy Unit: CAR 1 – Cardiff Bay Barrage



Preferred Policies to Implement the Plan:

Epoch	Preferred Policy	Comments
0 to 20 years (2025)	HTL	The short term policy for this unit is Hold The Line The Cardiff Bay Barrage would remain in place with some maintenance. HTL <u>does not</u> guarantee funding to build or maintain current or future defences or to counter sea level rise.
20 to 50 years (2055)	HTL	The medium term policy for this unit is Hold The Line The Cardiff Bay Barrage would remain in place with some maintenance. HTL <u>does not</u> guarantee funding to build or maintain current or future defences or to counter sea level rise.
50 to 100 years (2105)	HTL	The long term policy for this unit is Hold The Line The Cardiff Bay Barrage would remain in place with some maintenance. HTL <u>does not</u> guarantee funding to build or maintain current or future defences or to counter sea level rise.

Economics

Policy Unit	Existing SMP1 Policy	Time Period (epoch)			SMP2 Assessment	
		0-20	20-50	50-100	Preferred Plan Present Value Damages	Preferred Plan Present Value Defence Costs
CAR 1	HTL	HTL	HTL	HTL	£568m (CAR1-3, WEN1-2 total)	£24m (CAR1-3, WEN1-2 total)

The preferred policy is economically viable.

There are no cost estimates available for the maintenance or replacement of a structure like the Cardiff Bay Barrage. Standard 'hard defences' costs have been used for the Cardiff Bay Barrage (see **Part A Section 3.6**). It should be noted that this underestimates the costs of maintaining the Cardiff Bay Barrage. An increase in costs would not alter the policy option.

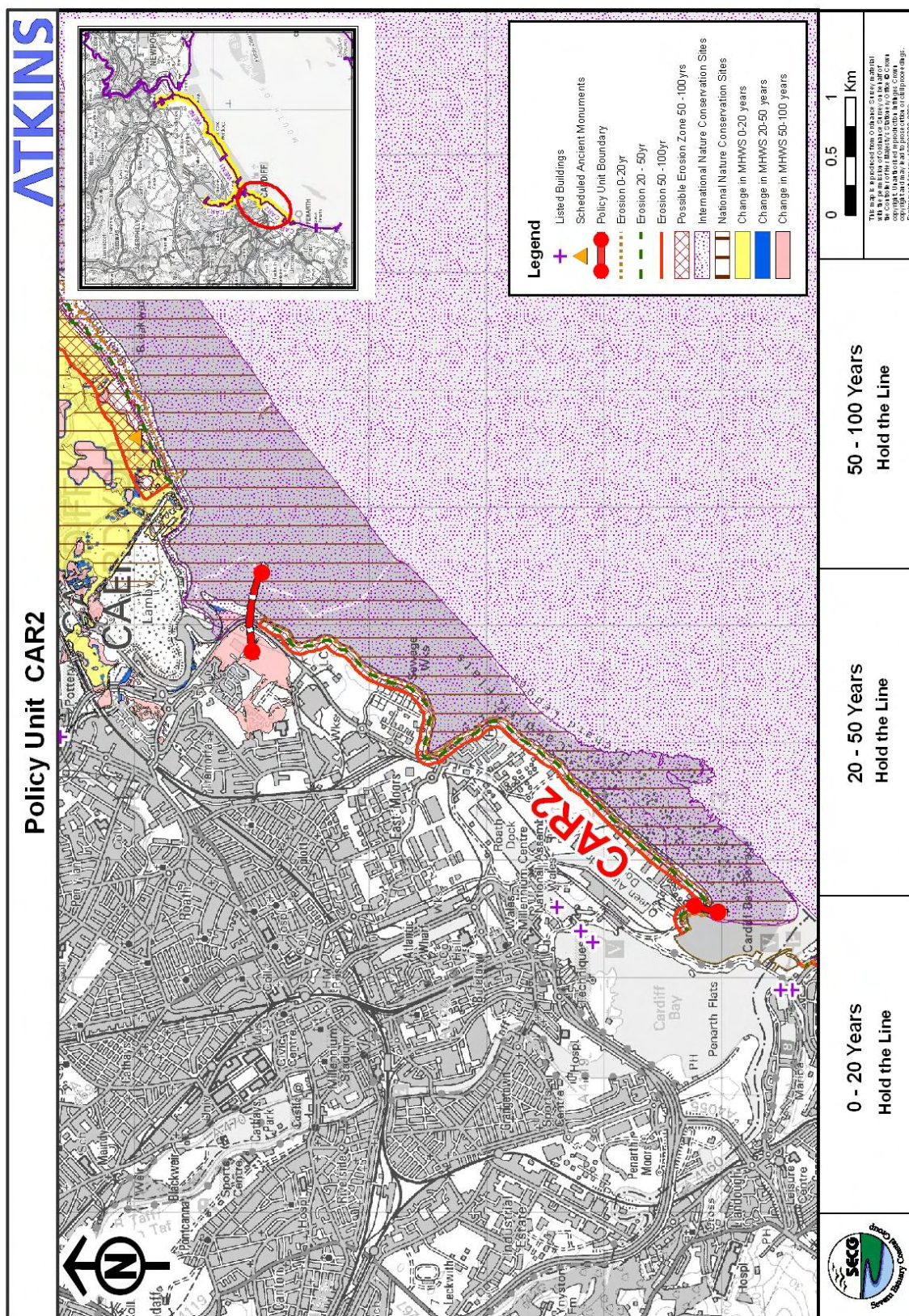
The preferred policy is economically viable for the linked Policy Units of CAR 1, CAR 2, CAR 3, WEN 1, and WEN 2. The costs and damages of the preferred policy in the table above relate to actions taken in all linked policy units.

Predicted Implication of the Preferred Plan for the CAR 1 Policy Unit

Time Period	Management Activities	Property, Land Use and Human Health	Nature Conservation – including Earth Heritage, Geology and Biodiversity	Landscape Character and Visual Amenity	Historic Environment	Amenity and Recreational Use
0 – 20 years	The Cardiff Bay Barrage is expected to remain in place and functional with minimal maintenance.	Defences will manage the risk of flooding on existing property, land use or human health. Maintaining the Cardiff Bay Barrage, the harbour and navigable channels will also be maintained.	A HTL policy will not impact the nature conservation sites during this time period. Works should take account of possible environmental impacts and the need for an EIA.	Maintaining existing defences will not impact on existing landscape and visual amenity.	Defences will manage the risk of flooding on the historic environment.	Defences will manage the risk of flooding on the amenity value of the land or recreational use.
20 – 50 years	The Cardiff Bay Barrage is expected to remain in place and functional with minimal maintenance.	Defences will manage the risk of flooding on existing property, land use or human health. Maintaining the Cardiff Bay Barrage, the harbour and navigable channels will also be maintained.	Some coastal squeeze will occur which will result in loss of intertidal habitats within N2K sites and SSSI. Works should take account of possible environmental impacts and the need for an EIA.	Maintaining existing defences will not impact on existing landscape and visual amenity.	Defences will manage the risk of flooding on the historic environment.	Defences will manage the risk of flooding on the amenity value of the land or recreational use.
50 – 100 years	The Cardiff Bay Barrage is expected to remain in place and functional with minimal maintenance.	Defences will manage the risk of flooding on existing property, land use or human health. Maintaining the Cardiff Bay Barrage, the harbour and navigable channels will also be maintained.	Some coastal squeeze will occur which will result in loss of intertidal habitats within N2K sites and SSSI. Works should take account of possible environmental impacts and the need for an EIA.	Maintaining existing defences will not impact on existing landscape and visual amenity.	Defences will manage the risk of flooding on the historic environment.	Defences will manage the risk of flooding on the amenity value of the land or recreational use.

The above provides the local details in respect of the SMP-wide policy presented in the preceding sections of this Plan document. These details must be read in the context of the wider-scales issues and policy implications, as reported therein.

Policy Unit: CAR 2 – Western end of Cardiff Bay Barrage to mouth of River Rhymney at Rover Way



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Preferred Policies to Implement the Plan:

Epoch	Preferred Policy	Comments
0 to 20 years (2025)	HTL	<p>The short term policy for this unit is Hold The Line</p> <p>The earth embankments will require repair and maintenance during this epoch. Some sections may need to be replaced.</p> <p>HTL manages the risk of impacts from flooding and erosion to industrial and residential areas of Cardiff. It is part of 5 linked Policy Units (CAR 1, CAR 2, CAR 3, WEN 1 and WEN 2). Actions should take account of potential impacts in all linked areas.</p> <p>HTL <u>does not</u> guarantee funding to build or maintain current or future defences or to counter sea level rise.</p>
20 to 50 years (2055)	HTL	<p>The medium term policy for this unit is Hold The Line</p> <p>The existing defences will come to the end of their serviceable life in this epoch. HTL recommends that defences are replaced. HTL manages the risk of impacts from flooding and erosion to industrial and residential areas of Cardiff. It is part of 5 linked Policy Units (CAR 1, CAR 2, CAR 3, WEN 1 and WEN 2). Actions should take account of potential impacts in all linked areas.</p> <p>HTL <u>does not</u> guarantee funding to build or maintain current or future defences or to counter sea level rise.</p>
50 to 100 years (2105)	HTL	<p>The long term policy for this unit is Hold The Line</p> <p>HTL manages the risk of impacts from flooding and erosion to industrial and residential areas of Cardiff. It is part of 5 linked Policy Units (CAR 1, CAR 2, CAR 3, WEN 1 and WEN 2). Actions should take account of potential impacts in all linked areas.</p> <p>HTL <u>does not</u> guarantee funding to build or maintain current or future defences or to counter sea level rise.</p>

Economics

Policy Unit	Existing SMP1 Policy	Time Period (epoch)			SMP2 Assessment	
		0-20	20-50	50-100	Preferred Plan Present Value Damages	Preferred Plan Present Value Defence Costs
CAR 2	HTL	HTL	HTL	HTL	£568m (CAR1-3, WEN1-2 total)	£24m (CAR1-3, WEN1-2 total)

The preferred policy for this unit is economically viable.

The preferred policy is economically viable for the linked Policy Units of CAR 1, CAR 2, CAR 3, WEN 1 and WEN 2. The costs and damages of the preferred policy in the table above relate to actions taken in all linked policy units.

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Predicted Implication of the Preferred Plan for the CAR 2 Policy Unit

Time Period	Management Activities	Property, Land Use and Human Health	Nature Conservation – including Earth Heritage, Geology and Biodiversity	Landscape Character and Visual Amenity	Historic Environment	Amenity and Recreational Use
0 – 20 years	The shoreline will remain stable. Earth embankments will require maintenance. Flood risk is limited in this period.	Defences will manage the risk of flooding on existing property, land use or human health.	An HTL policy will not impact the nature conservation sites during this time period. Works should take account of possible environmental impacts and the need for an EIA.	Defences will manage the risk of flooding on existing landscape and visual amenity	Defences will manage the risk of flooding on the historic environment	Defences will manage the risk of flooding on the amenity value of the land or recreational use.
20 – 50 years	The shoreline will remain stable. Defences will need to be replaced in this period. The majority of this unit benefits from high ground.	Defences will manage the risk of flooding on existing property, land use or human health.	Coastal squeeze will occur which will result in loss of intertidal habitats affecting Severn N2K and SSSI. Works should take account of possible environmental impacts and the need for an EIA.	Defences will manage the risk of flooding on existing landscape and visual amenity	Defences will manage the risk of flooding on the historic environment	Defences will manage the risk of flooding on the amenity value of the land or recreational use.
50 – 100 years	The shoreline will remain stable. Defences should be monitored and maintained.	Defences will manage the risk of flooding on existing property, land use or human health.	Coastal squeeze will occur which will result in loss of intertidal habitats affecting Severn N2K and SSSI. Works should take account of possible environmental impacts and the need for an EIA.	Defences will manage the risk of flooding on existing landscape and visual amenity	Defences will manage the risk of flooding on the historic environment	Defences will manage the risk of flooding on the amenity value of the land or recreational use.

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Preferred Policies to Implement the Plan:

Epoch	Preferred Policy	Comments
0 to 20 years (2025)	HTL	<p>The short term policy for this unit is Hold The Line</p> <p>HTL manages the risk of flooding and erosion impacts to industrial and residential areas of Cardiff, including transport links and Lamby Way landfill site. Flooding at the landfill site could be harmful to water quality. Flood risk is localised. High ground limits flood risk in some areas. HTL would require defence structures in only some areas. Actions should take account of potential impacts in linked Policy Units (CAR 1, CAR 2, WEN 1 and WEN 2).</p> <p>HTL <u>does not</u> guarantee funding to build or maintain current or future defences or to counter sea level rise.</p>
20 to 50 years (2055)	HTL	<p>The medium term policy for this unit is Hold The Line</p> <p>HTL manages the risk of flooding and erosion impacts to industrial and residential areas of Cardiff, including transport links and Lamby Way landfill site. Flooding at the landfill site area could be detrimental to the water quality. Flood risk is localised - HTL would only require defence structures in some places. In other areas, high ground limits the risk. Actions should take account of potential impacts in linked Policy Units (CAR 1, CAR 2, WEN 1 and WEN 2).</p> <p>HTL <u>does not</u> guarantee funding to build or maintain current or future defences or to counter sea level rise.</p>
50 to 100 years (2105)	HTL	<p>The long term policy for this unit is Hold The Line</p> <p>HTL manages the risk of flooding and erosion impacts to industrial and residential areas of Cardiff, including transport links and Lamby Way landfill site. Flooding at the landfill site area would be detrimental to the water quality. Flood risk is localised - HTL would only require defence structures in some places. In other areas, high ground limits the risk. Actions should take account of potential impacts in linked Policy Units (CAR 1, CAR 2, WEN 1 and WEN 2).</p> <p>HTL <u>does not</u> guarantee funding to build or maintain current or future defences or to counter sea level rise.</p>

Economics

Policy Unit	Existing SMP1 Policy	Time Period (epoch)			SMP2 Assessment	
		0-20	20-50	50-100	Preferred Plan Present Value Damages	Preferred Plan Present Value Defence Costs
CAR 3	HTL	HTL	HTL	HTL	£568m (CAR1-3, WEN1-2 total)	£24m (CAR1-3, WEN1-2 total)

The preferred policy is economically viable for the linked Policy Units of CAR 1, CAR 2, CAR 3, WEN 1 and WEN 2. The costs and damages of the preferred policy in the table above relate to actions taken in all linked policy units.

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Predicted Implication of the Preferred Plan for the CAR 3 Policy Unit

Time Period	Management Activities	Property, Land Use and Human Health	Nature Conservation – including Earth Heritage, Geology and Biodiversity	Landscape Character and Visual Amenity	Historic Environment	Amenity and Recreational Use
0 – 20 years	The shoreline will remain stable and flood risk is limited in this period, and as a result management activities will be limited.	Defences will manage the risk of flooding on existing property, land use or human health.	An HTL policy will not impact the nature conservation sites during this time period. Works should take account of possible environmental impacts and the need for an EIA.	Limited erosion and flood risk will not impact on existing landscape and visual amenity	Defences will manage the risk of flooding on the historic environment.	Defences will manage the risk of flooding on the amenity value of the land or recreational use.
20 – 50 years	The shoreline will remain stable. The defences will need to be replaced in this epoch. High ground in most of this policy unit limits flood risk.	Defences will manage the risk of flooding on existing property, land use or human health.	Coastal squeeze will occur which will result in loss of intertidal habitats affecting Severn N2K and SSSIs in the area. Works should take account of possible environmental impacts and the need for an EIA.	Limited erosion and flood risk will not impact on existing landscape and visual amenity	Defences will manage the risk of flooding on the historic environment.	Defences will manage the risk of flooding on the amenity value of the land or recreational use.
50 – 100 years	The shoreline will remain stable. Defences should be maintained in the long term.	Defences will manage the risk of flooding on existing property, land use or human health.	Coastal squeeze will occur which will result in loss of intertidal habitats affecting Severn N2K and SSSIs in the area. Works should take account of possible environmental impacts and the need for an EIA.	Limited erosion and flood risk will not impact on existing landscape and visual amenity	Defences will manage the risk of flooding on the historic environment.	Defences will manage the risk of flooding on the amenity value of the land or recreational use.

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