

coastal
vision

Coastal Vision

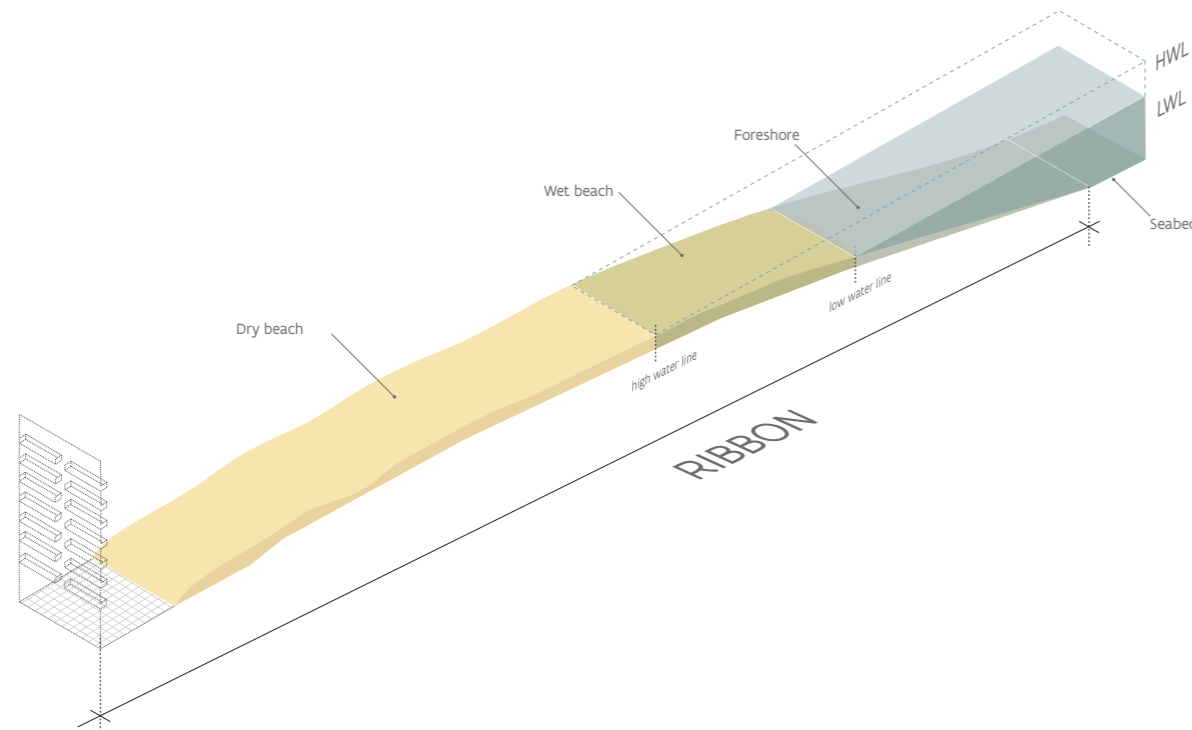
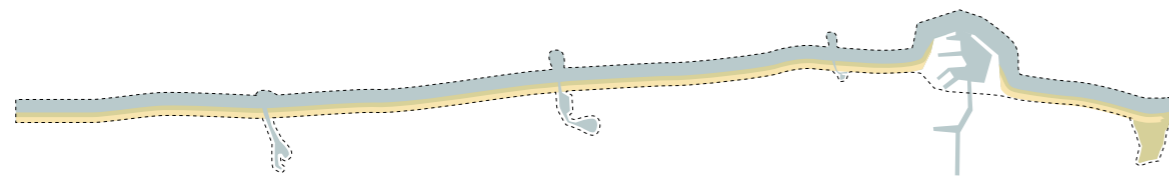
Belgium's coastal defense against +3m sea level rise

Coastal Vision

Belgium's coastal defense against +3m sea level rise

The climate is changing and sea levels are rising. These are facts that we cannot ignore and to which we must also respond in time. That is why we have been working intensively with many stakeholders in recent years on a promising strategic policy plan for our coast.

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Coastal Vision: more than just coastal protection

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Coastal protection ribbon

As a result of a two year co-creative design process with all key stakeholders along the Belgian coastline, we defined a coastal protection ribbon with an accompanying strategic roadmap. The intention is to take all future coastal protection measures within that coastal protection ribbon to continue to protect us from a thousand-year storm event at +1 m, +2 m and +3 m sea level rise. This ribbon stretches across the entire length of our coast, reaching from the French to the Dutch border. It also includes our 4 coastal ports. It runs from the first-line buildings, across (parts of) our rich dune landscape to the waterline.

Coastal Vision is much more than just coastal protection. The coast today has numerous assets and opportunities. Even with sea level rise, the coast must remain promising. That is why we have designed the ribbon so that coastal protection can go hand in hand with the further development of our coast in the future.

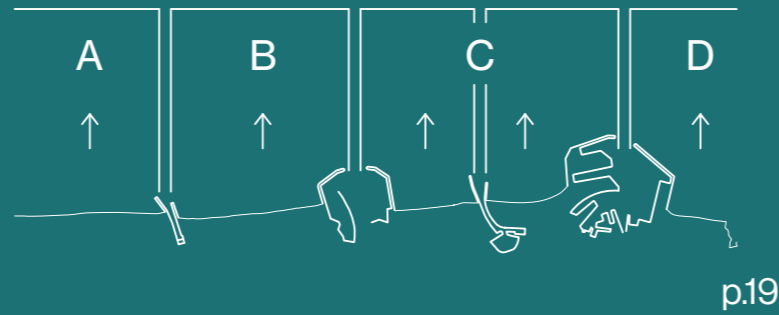
In other words, with Coastal Vision we delineate a promising coastal protection ribbon along the entire length of the coast.

Coastal Vision also provides a protection strategy for both beaches and ports. And we have developed roadmaps for the phased implementation of coastal protection. At the pace of sea level rise. Coastal Vision keeps a low profile when it comes to the nature of the coastal protection measures themselves. After all, we want to offer that freedom to future generations as much as possible.

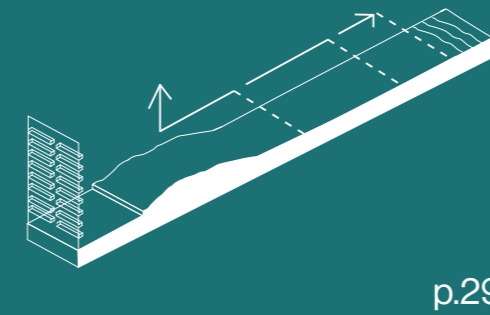
We briefly outline the size of the ribbon and the various possible protection strategies in this brochure. More detailed explanations can be found on the website www.kustvisie.be.

Guide to rolling out Coastal Vision in function of sea level rise

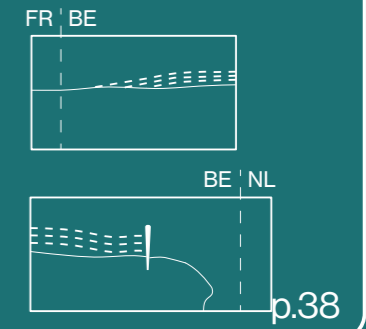
In function of sea level rise, zones determine their own seaward rhythm



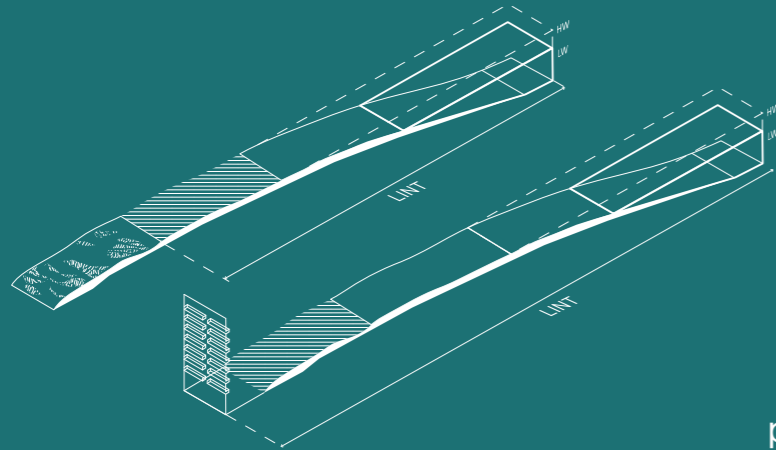
The seaward rhythm can proceed in steps or in one leap



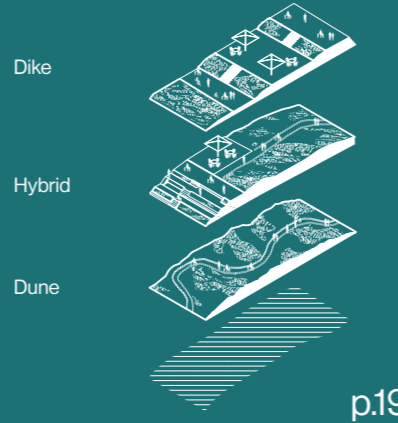
Connection with France and the Netherlands



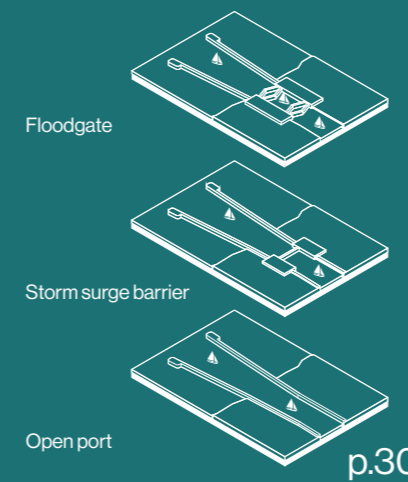
The ribbon extends seaward from parts of the existing dunes and from the first-line buildings



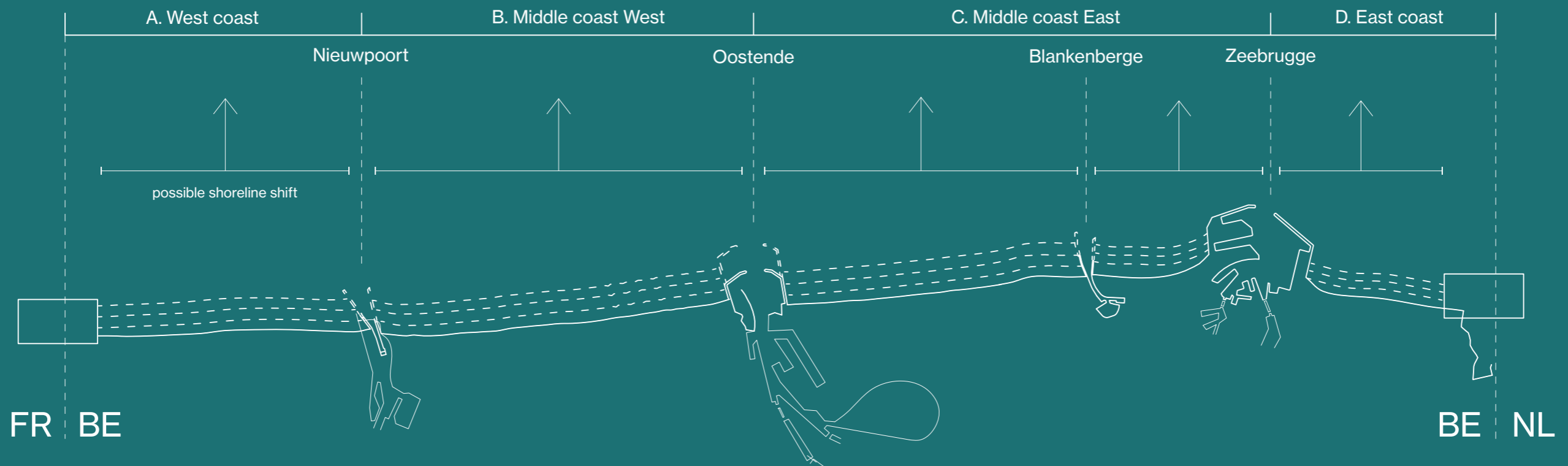
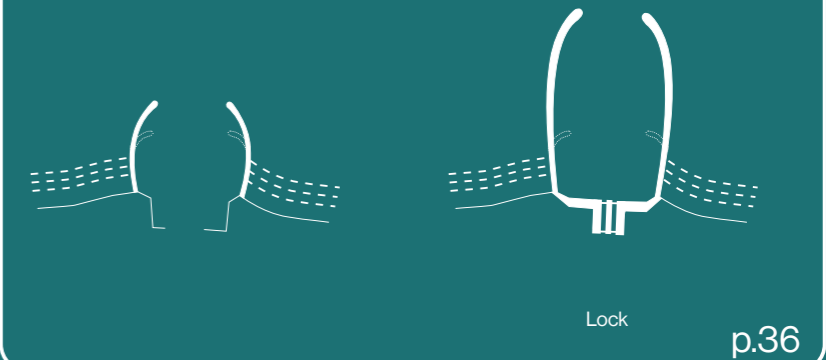
Freedom to choose type of protection measure at seaside cities



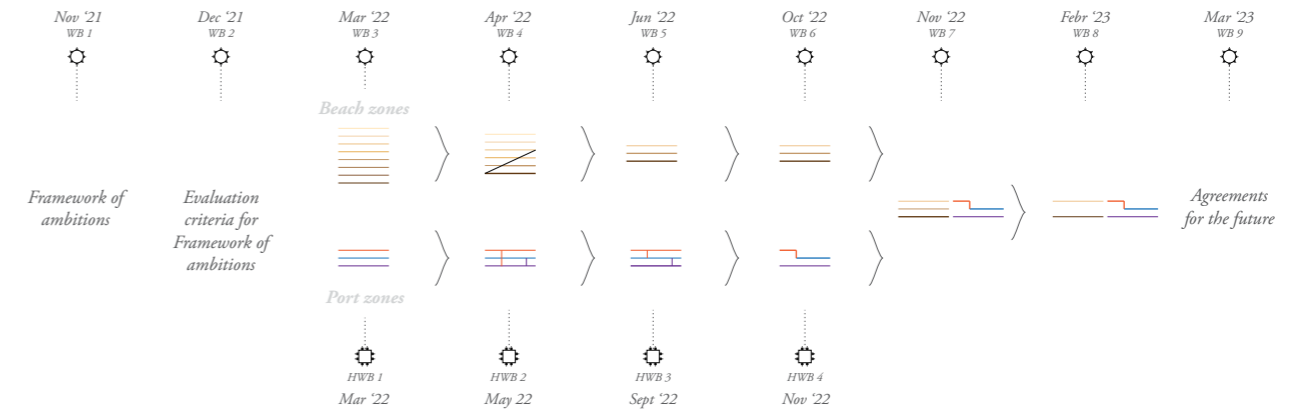
Choices at ports



Breakwater dams grow or adapt to the chosen strategy



Coastal Vision relies on an integrated approach so that tomorrow's coastal protection will be an ecological, tourist-recreational and an economical success.



Co-creation

Coastal Vision is the result of intensive co-creation with virtually all the stakeholders on and around our coast. Each of them has helped to shape Coastal Vision according to their own vision and taking into account their own needs. That is precisely what makes this plan so promising. To make the most of this opportunity in the future, cooperation will continue to be crucial.

Coastal Vision is the result of an intensive co-creation process with professional stakeholders, public action groups and politicians. We organised in total 13 work benches spread over 2 years.



Collaboration

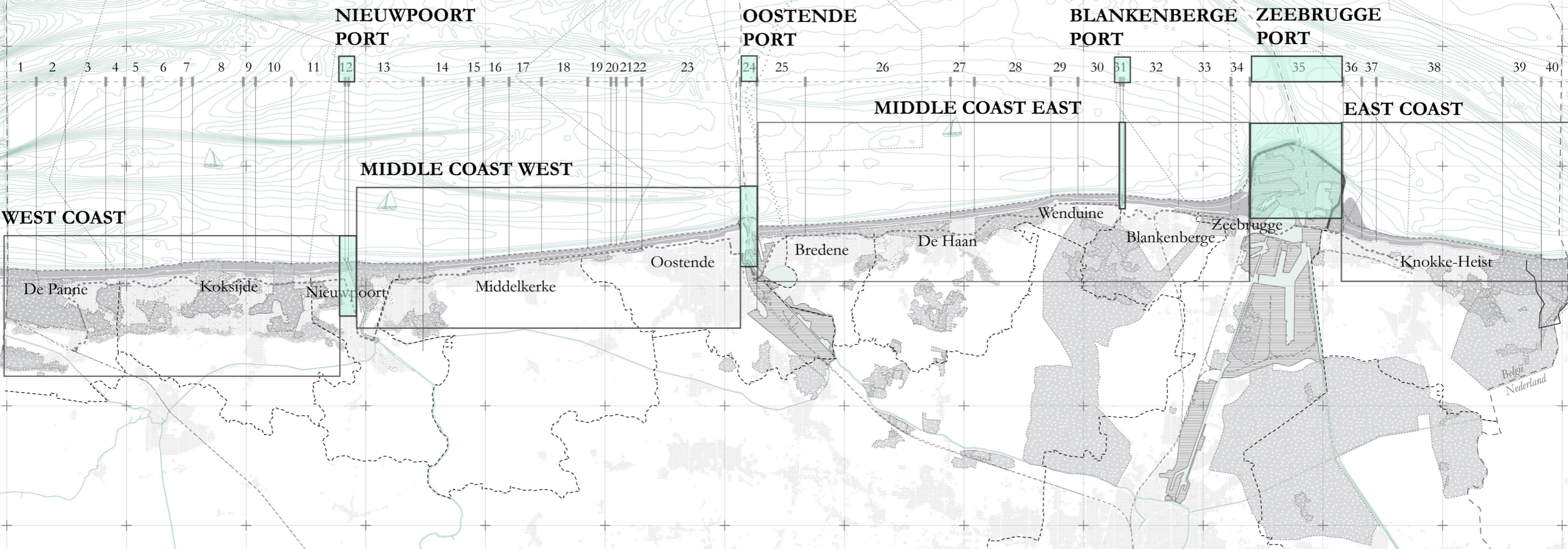
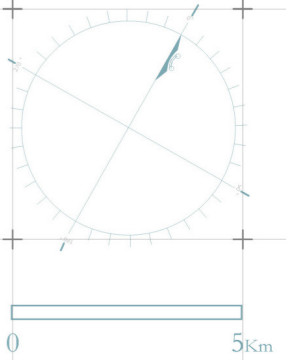
Collaboration has been central in this process. The current contours of Coastal Vision are the result of intensive cooperation between more than a hundred stakeholders, from the French to the Dutch border, and from all sectors of coastal society.

We designed and led a co-creation process involving over 100 professional stakeholders, public action groups and political stakeholders. In total we organised 13 work benches spread over 2 years. And we had a multitude of bilateral meetings. This intensive process led to protection alternatives for the Belgian beaches and harbours. In order to make Coastal Vision a reality, cooperation will continue to be essential. At the end of this magazine, we describe the outline of this future cooperation structure.

Actions

The Master Plan for Coastal Safety (2011) protects us to at least +0.3m sea level rise by 2050. Coastal Vision is consistent with this. And although 2050 is still a long way ahead, we need to prepare now. We have therefore worked together with all stakeholders to develop a first action plan to guide the implementation of Coastal Vision over the next 10 years. We have included a brief overview of this at the end of this brochure. All the proposed actions are cross-cutting. This is the only way we can realise the promise of Coastal Vision.

Coastal Vision covers the entire coastline from the French to the Dutch border, including the four coastal ports.



Challenges

The expected sea level rise is the main reason for additional long-term coastal protection and is at the same time the most uncertain factor.

+1 m, +2 m and +3 m sea level rise

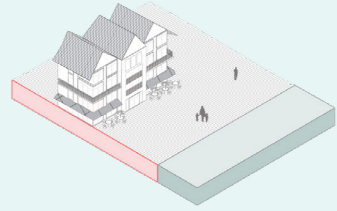
We know that sea levels are rising. And around the world there is evidence that sea levels have been rising faster on average per year in recent decades than in the last century. The Master Plan for Coastal Safety (2011) will protect our coast from a 1000-year storm event until at least 2050. Most climate scenarios indicate that sea levels will have risen by around +0.3 m by then. How fast sea levels will rise in the future depends very much on how our greenhouse gas emissions, the associated rise in average temperatures and the melting of glaciers will develop. And the further into the future we try to look, the more divergent the results between different climate scenarios. According to most models, sea levels along our coast are likely to rise by about +1 m over the next 100 years. Some models predict - with a small probability - an even higher sea level rise. In order to prepare Flanders for even the most pessimistic scenario, Coastal Vision also looks at +2 m and +3 m sea level rise.

Insurance

If we do nothing, the consequences are incalculable. Buildings at risk, people at risk but also the coastal economy at risk. The survival of our four coastal ports that will be threatened as will all activities in the tourism and recreation sector. Not to mention the hinterland with its numerous residents, vast agricultural polders and nature reserves.... Looking to the future, Coastal Vision is the only right solution to protect us from sea level rise in the long term. It is our insurance to keep Flanders dry - without giving up any land. Only in this way can we guarantee that present and future generations can continue to invest in and enjoy our coast without worry!

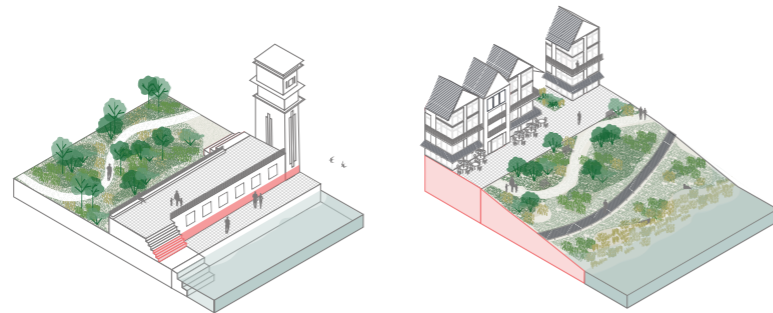
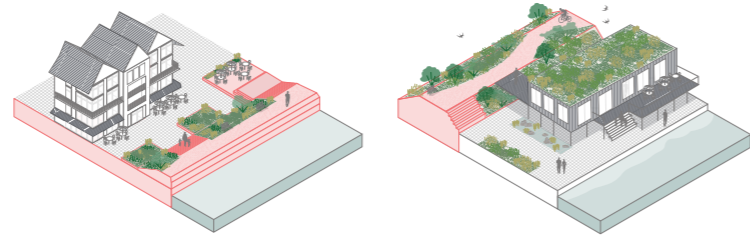
With its location and its ability to offer space, the ribbon contributes to a high quality experience of the coast - as a living environment, as a tourist-recreational destination and as a natural area.



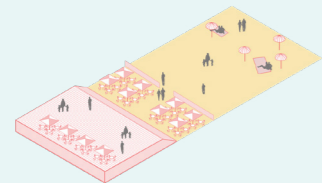


Port zones

Principle 'ribbon' outlined based on recreational ports

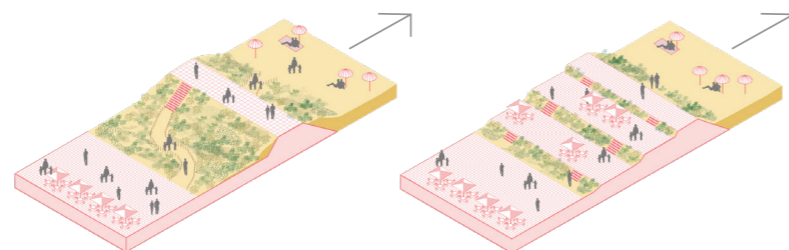
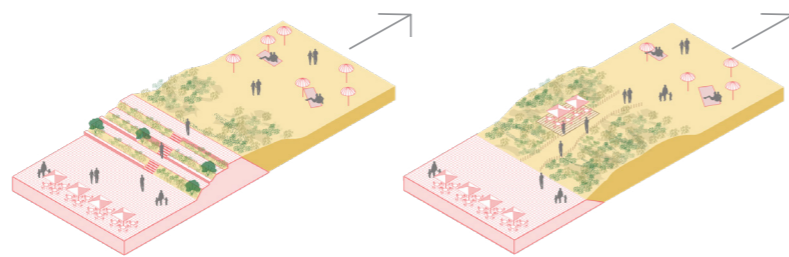


In a promising coastal protection ribbon, coastal protection goes hand in hand with economic, recreational, natural, ... developments. The space for the ribbon is provided accordingly.



Beach areas

Principle 'ribbon' outlined based on generic beach zone



Opportunity: From Line to Ribbon

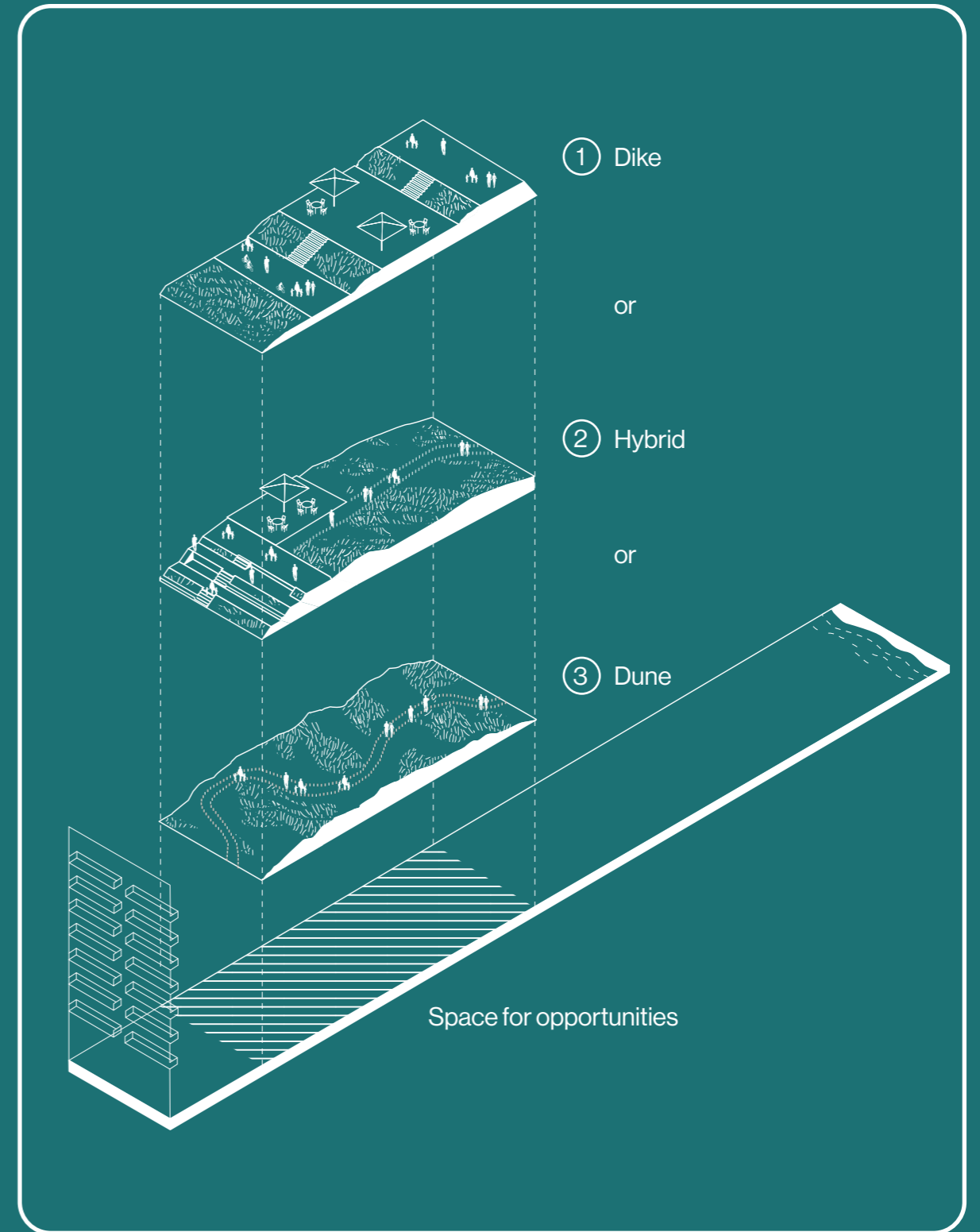
Protecting the beach and port zones against a sea level rise of +3 m poses specific challenges. After all, to implement the necessary protection measures successfully with high quality, we need sufficient space. For example, we cannot continue to raise storm walls. That would undermine the usability of our ports. And we would destroy the quality of the public space along the coast.

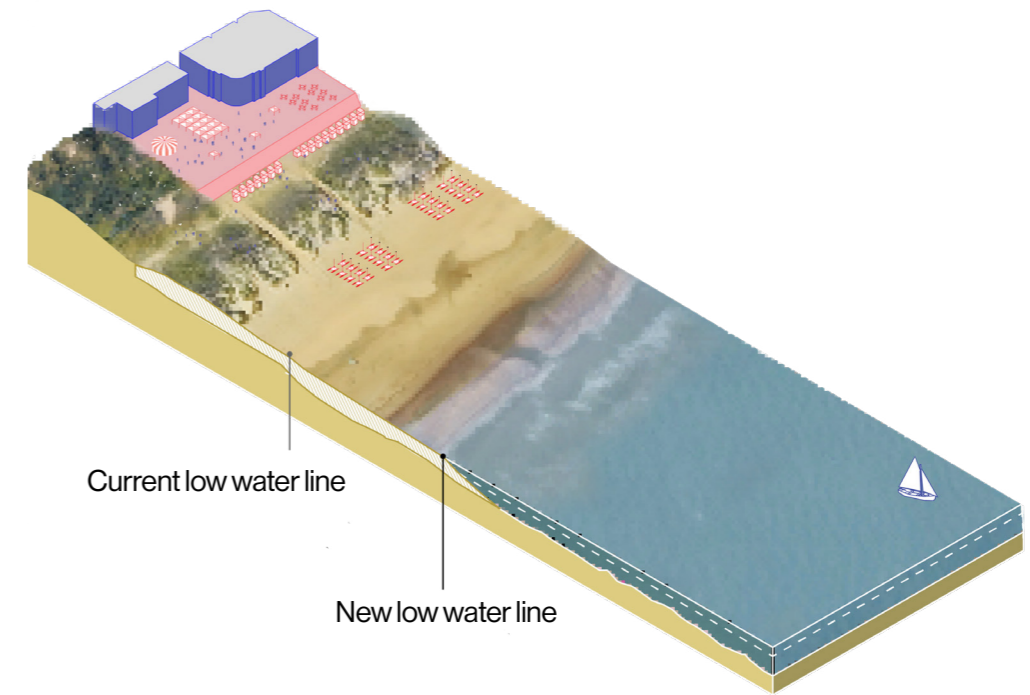
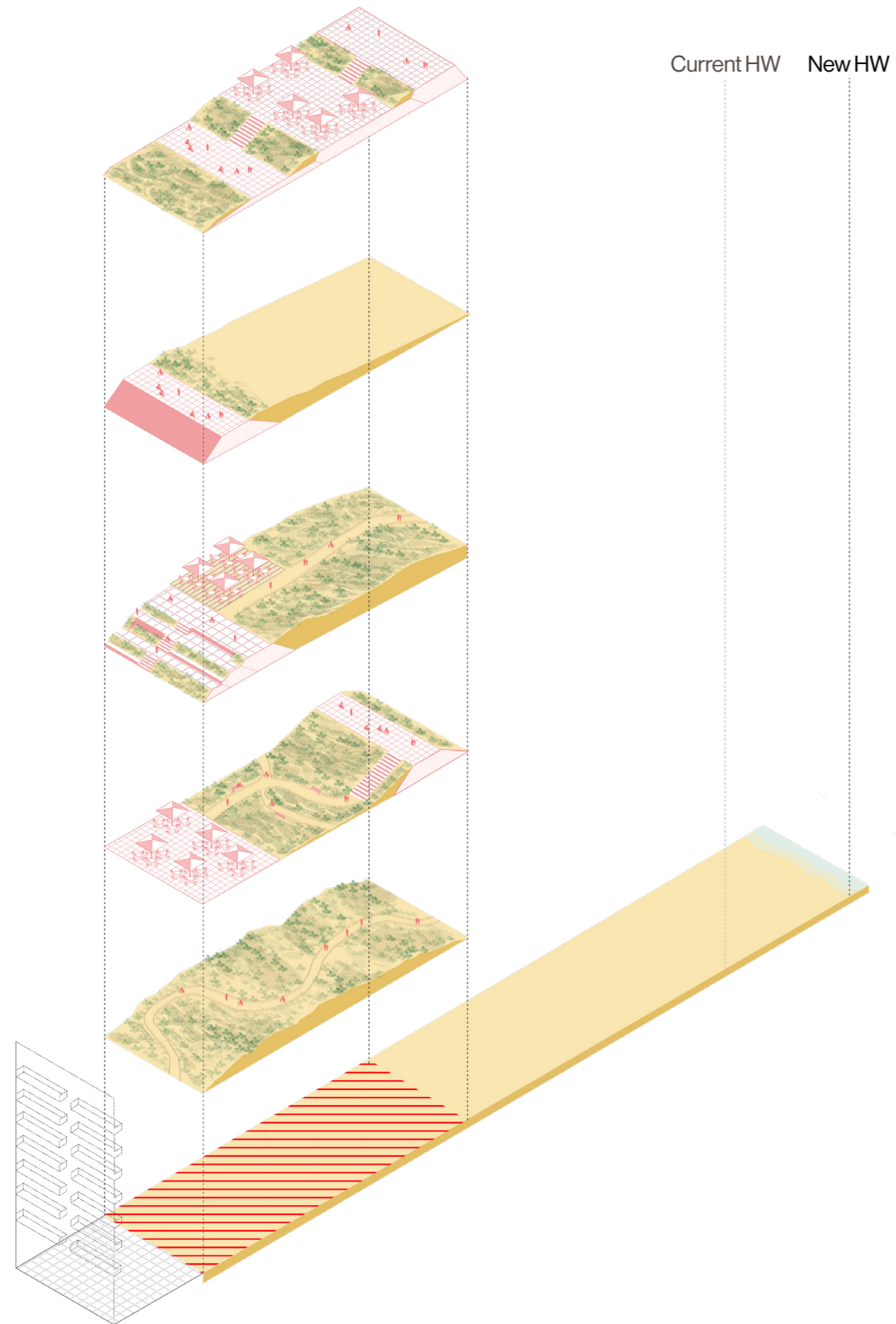
That is why in Coastal Vision we are working with a coastal protection ribbon: a zone within which future coastal protection measures can be built with quality. And in which we take into account the needs of all actors. Near the coastal towns, the ribbon provides therefore enough space to combine coastal protection with economy, recreation, nature, etc. Think of multifunctional dikes with space for bars and terraces, sports, parks, etc. Think of protective grass dikes with space for footpaths and playgrounds. Or think of protective dunes with space for recreation

and nature development. In the ports, we must also consider 'staying operational', in addition to protection - even at high water levels. There is a direct correlation between the ease of access to the port and the necessary adjustments and elevations of dikes, quays and storm walls, locks, etc. This should be taken into account when selecting and designing the appropriate protection measures. For this reason, the ribbon also provides sufficient space in the four coastal ports. In this way, coastal protection becomes an opportunity for further development of the ports and for other activities in and around the ports. Within the ribbon, developments are and will remain possible without compromising coastal protection. In order to give all stakeholders certainty towards the future, we have included in the first action plan the priority of creating an accompanying legal framework. Coastal Vision must not prevent current and future development in any field on our coast. On the contrary.

Beach areas

Our coast is a 67 kilometre long and can be seen as a unique chain of beads of dunes and seaside resorts. In order to keep this chain of beads safe and attractive even when the sea level rises, the Coastal Vision provides a coastal protection ribbon that is wide enough to preserve, support and even enrich the individuality of the various beads.





Seaward

To protect our coast from a sea level rise of +3m sea, we shift the high and low water line (in time) on average a hundred metres seaward. That is quite a lot. By doing so, we create more space for incorporating coastal protection measures and we can (at least) maintain the current dry beach width. The ribbon is wide enough to eventually accommodate a protective dune landscape along the entire coastline. That way, the Belgian coast might change into one continuous robust dune landscape, stretching from the French to the Dutch border.

Anyway, we are already opting for a 'dune for dune' for existing dunes. In places where no dunes border the beach today, other options are also possible.

After all, the width of the ribbon allows for a range of coastal protection measures. Think of a multifunctional dike with sports recreation facilities, a stepped grass dike with terraces or a generously designed dune park. And what we gain in dry beach can also be used to widen the promenade.

To connect the raised and seaward expanded beach to the existing seabed, the wet beach will also be shifted seaward and connected to the foreshore. We do not need to widen all the beaches as much. Each zone - West Coast, Central Coast West, Central Coast East and East Coast - can follow its own rhythm as a zone. Provided the water is kept out.

Thanks to the dune for dike, a green ribbon is created connecting dune areas - all along the coast.

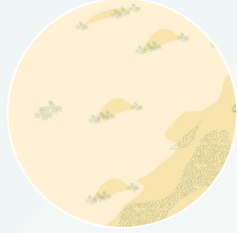
The current width of the dry beach will be maintained

The stepped shape of the dike provides space for numerous play and sports facilities, terraces as well as seating areas

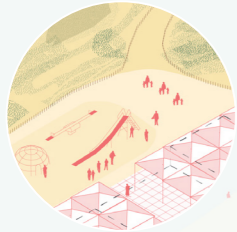
We imagine the future coastal protection as one elongated beach park.



A protective body of dunes, between beach and promenade, gives the coastal town a natural character



New dunes strengthen existing dune areas and provide opportunities for nature and ecology



Open spaces between the dune and the dike accommodate sports fields, playgrounds or other functions

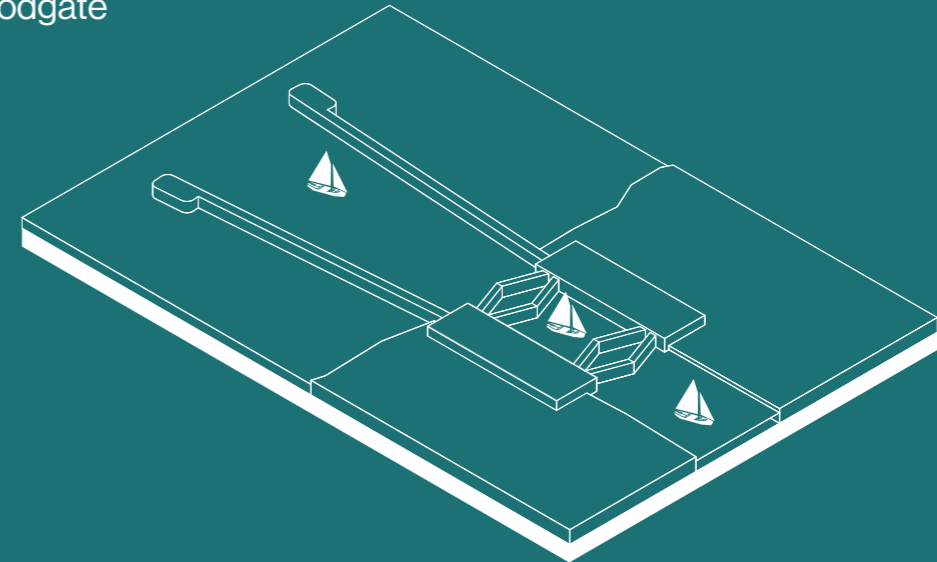
Or rather as an ecological, multifunctional dune landscape? Up to our future generations.

Ports

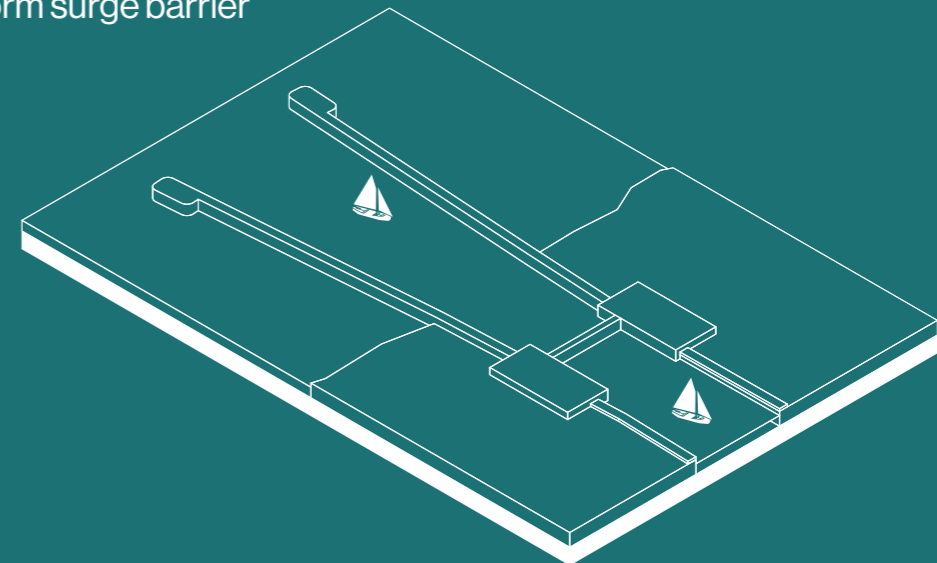
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Ports breach the continuous coastline. To protect port activities and the hinterland from rising sea levels, actions are also required here. Moreover, the ports are the anchor points to accommodate the seaward expansion of beaches. Decisions still need to be taken for three of the four ports. In the coming years, a port development vision will be drawn up for the future of our coastal ports - and this in close consultation with the stakeholders involved. The aim of the study is to obtain objective insights in order to make the right protection choices for each port.

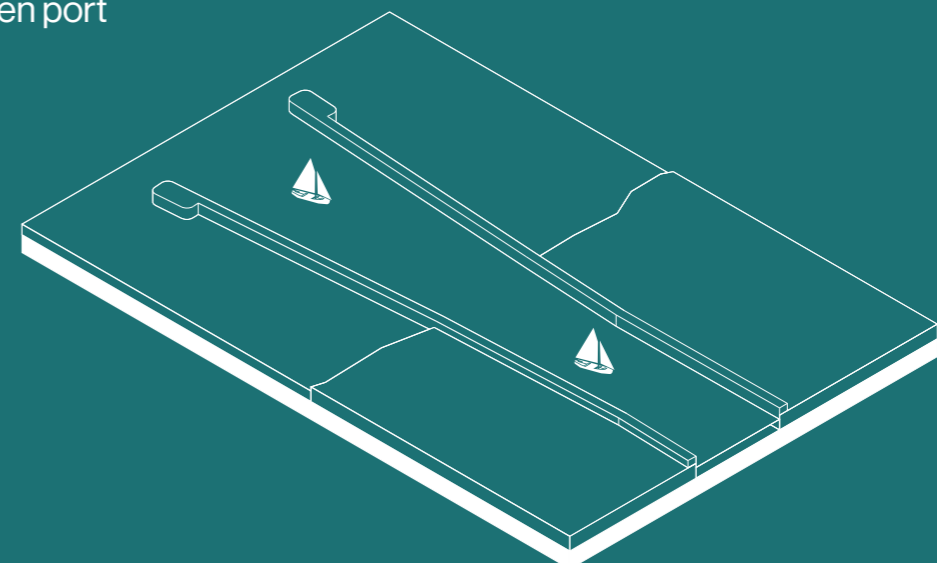
Floodgate



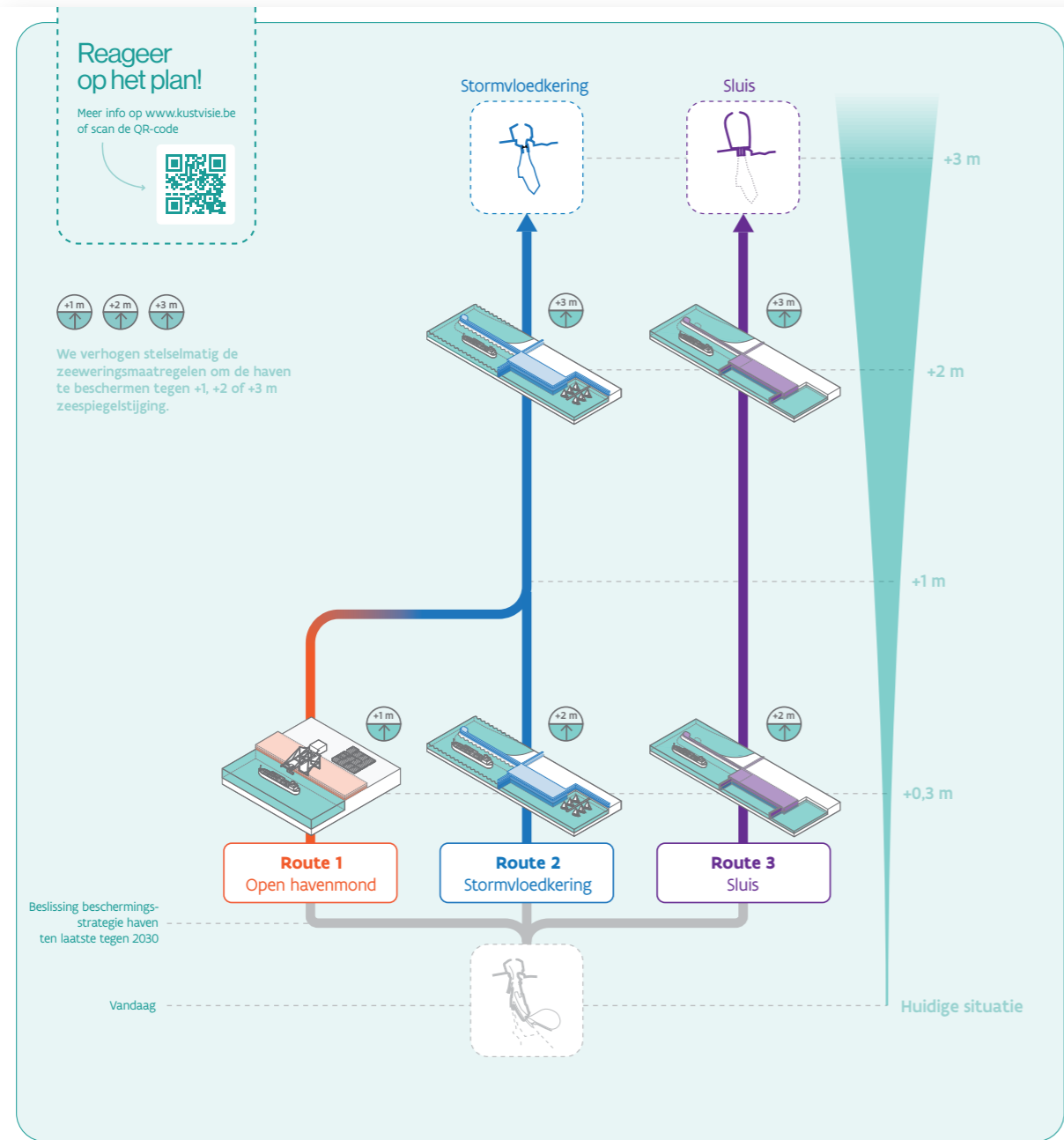
Storm surge barrier



Open port

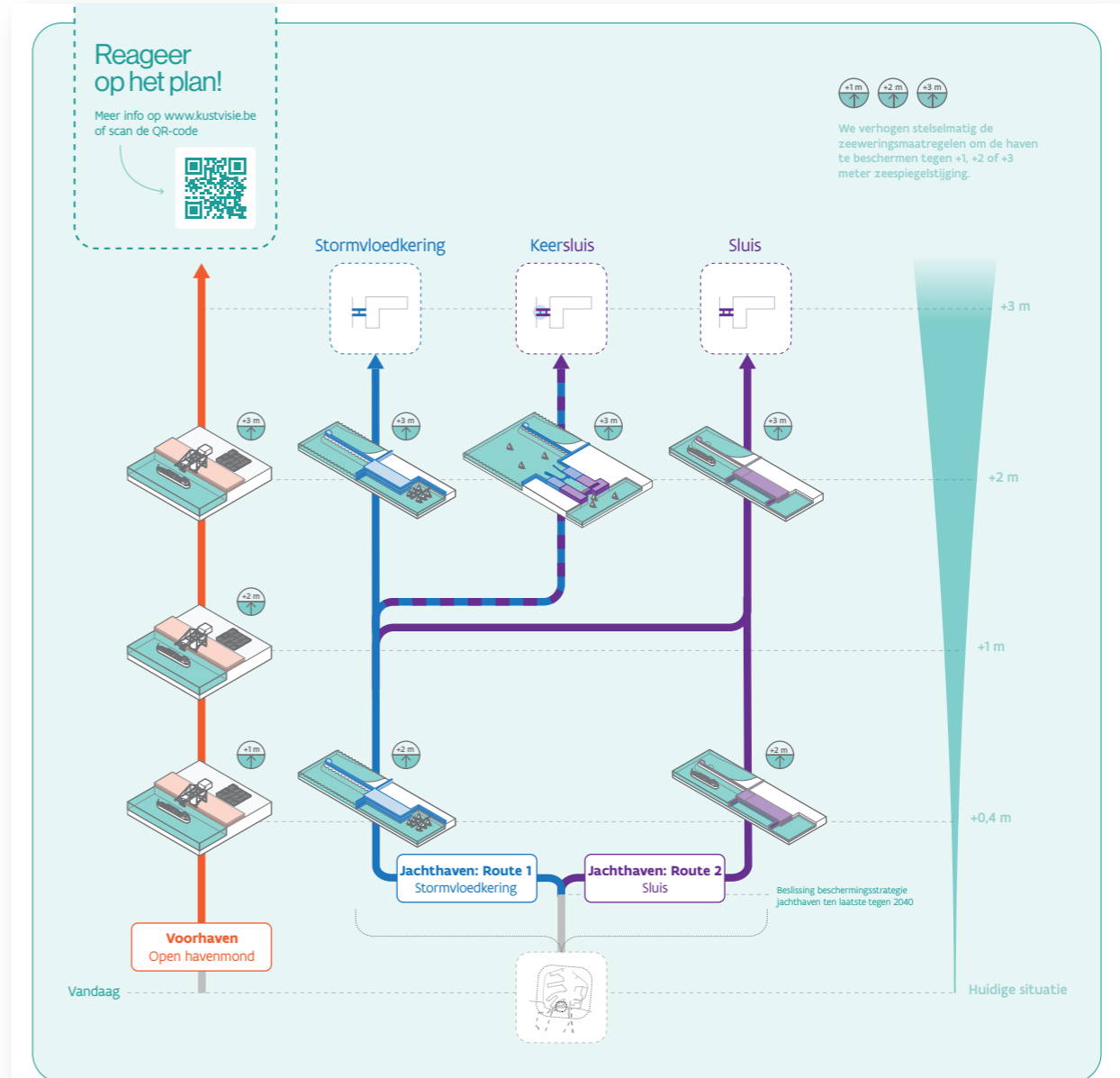


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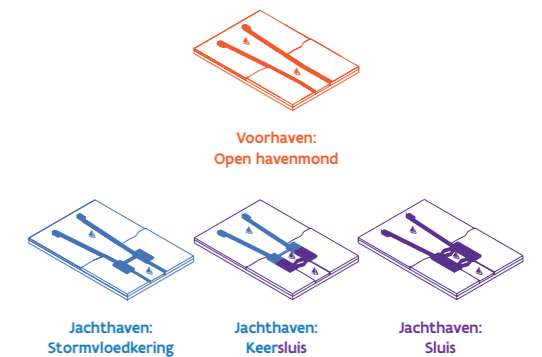
Haven van Oostende

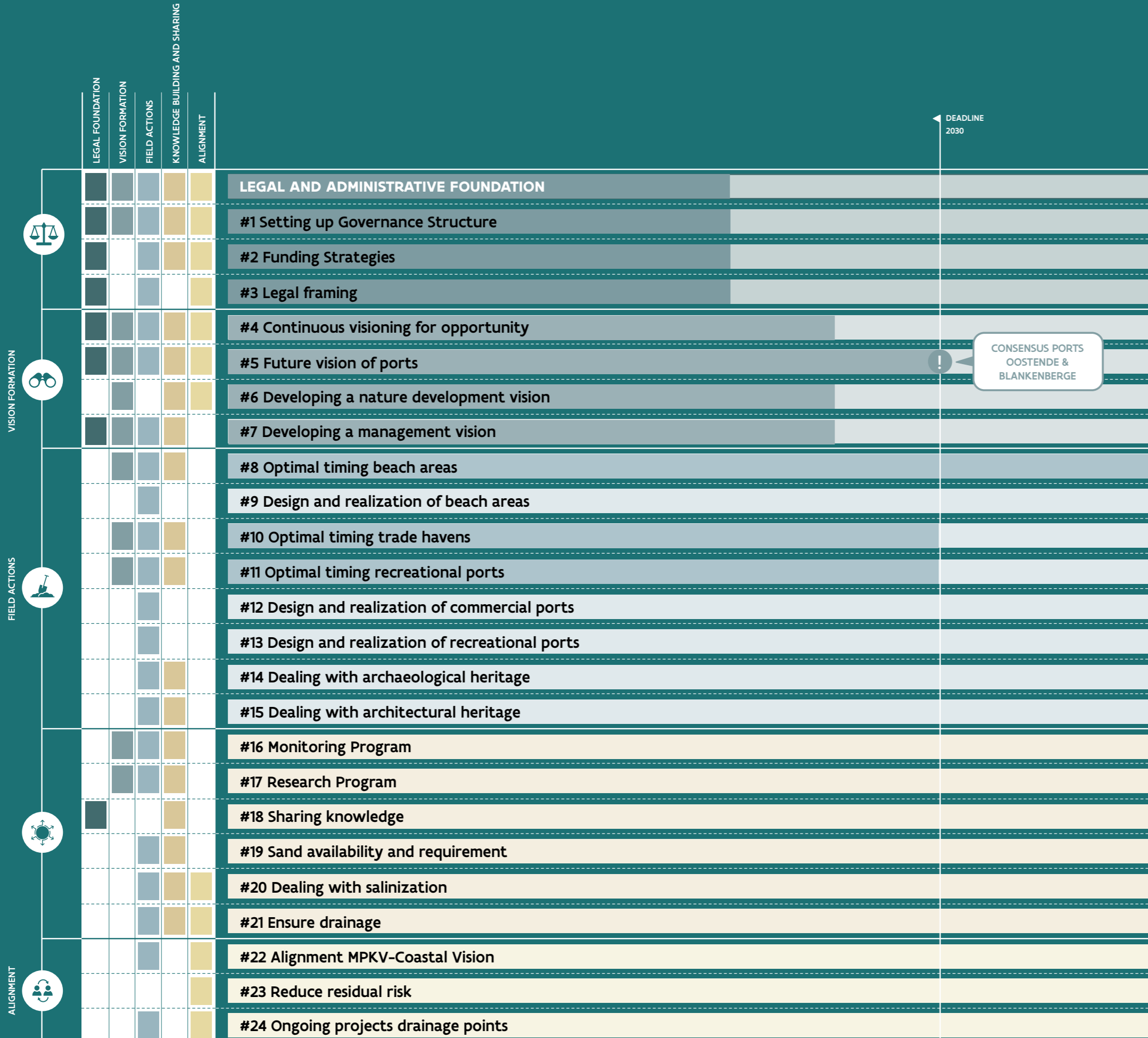
Dankzij de maatregelen uitgevoerd en gepland in het kader van het Masterplan Kustveiligheid zal de haven van Oostende sowieso beschermd zijn tegen een zeespiegelstijging van +0,3 m. Om de haven en het achterland te beschermen tegen een nog hogere zeespiegelstijging liggen nog drie routes voor: tegen 2030 kiezen voor de open haven gevolgd door een stormvloedkering (route 1), kiezen voor een stormvloedkering (route 2) of kiezen voor een sluis (route 3). Rekening houdend met zeespiegelstijging en de noodzakelijke planningstermijnen, dient een definitieve keuze gemaakt te worden ten laatste tegen 2030. De stad Oostende, de haven van Oostende en Vlaanderen engageren zich om de volgende jaren tot een gedragen beslissing te komen.



Haven Zeebrugge

Voor de voorhaven is het volledig open houden de enige piste. Op termijn zullen we alle kadeterreinen in meer of mindere mate moeten verhogen. Ook de strekdammen dienen we stelselmatig te verhogen. In de jachthaven biedt het Masterplan Kustveiligheid bescherming tot en met +0,4 m zeespiegelstijging. Om de haven en het achterland ook daarna te beschermen, zijn er nog verschillende routes: een stormvloedkering (met meerdere opties nadien; route 1) of een sluis (route 2). Bij het volgen van route 1 laten we aan toekomstige generaties - richting +2 m zeespiegelstijging - de vrijheid om te kiezen voor een verhoogde en versterkte stormvloedkering met bijkomende ophogingen rondom de haven, een keersluis of een sluis. Een definitieve keuze tussen route 1 en 2 dient gemaakt te worden tegen ten laatste 2040.





Actions

First action plan with implementation horizon (2024 - 2034)

To realise the coastal protection ribbon, stakeholders will need to take actions over the next decades and beyond. Together, we have developed a list of actions we need to initiate over the next 10 years. Some of these actions need to be started as a priority (shown in dark in the figure) and also have a deadline. After all, we know from the port alternatives that in Blankenberge and Oostende we have to make a decision by 2030 at the latest.

The actions are of a strategic nature. That way, they can give direction and preserve the integrated character of the necessary solution directions.

Coastal Vision is about realising a coastal protection ribbon answering the needs of all stakeholders. Therefore, actions are realised in mutual interaction (visible in the left-hand column). We have chosen a time span of 10 years for the first action plan. This way, we do not plan too far ahead and we can keep our finger on the pulse at the same time. Every 10 years, we will adjust or develop a new action plan. Or when tipping points of e.g. sea level rise are exceeded. In this way, we can constantly adapt the speed and the way in which we realise the strategic vision together to reality and progressive insight.

CONSENSUS PORTS OOSTENDE & BLANKENBERGE

DEADLINE 2030

Coastal Vision came about thanks to a streamlined process of cocreation and alignment. The future governance structure will continue this approach.

Cooperation structure

Building blocks

Coastal Vision is complex due to its scale, challenges and diverse interests. Thanks to the intensive cooperation between more than a hundred professional stakeholders, we were able to bridge points of difference and draw a supported promising coastal protection ribbon. To maintain the support base that has been built up and to realise all the opportunities, Coastal Vision needs its own cooperation structure in the future.

The principle of cocreation remains guiding: in each project, all stakeholders involved will continue to work together. And to continue to capture all challenges and interests and align solutions, it makes sense to build on the consultation structures that have already proven their success today. We propose to enrich them here and there.

Representatives from civil society, the business world, academia, government and stakeholders serving environmental interests continue to meet in project-specific working groups. Here, stakeholders work together in a focused way to find supported solutions.

Project leaders and key stakeholders meet in a management committee. This is where ongoing projects are coordinated.

A steering committee helps to follow up the strategic lines. Here, too, the composition reflects the various challenges and interests specific to Coastal Vision.

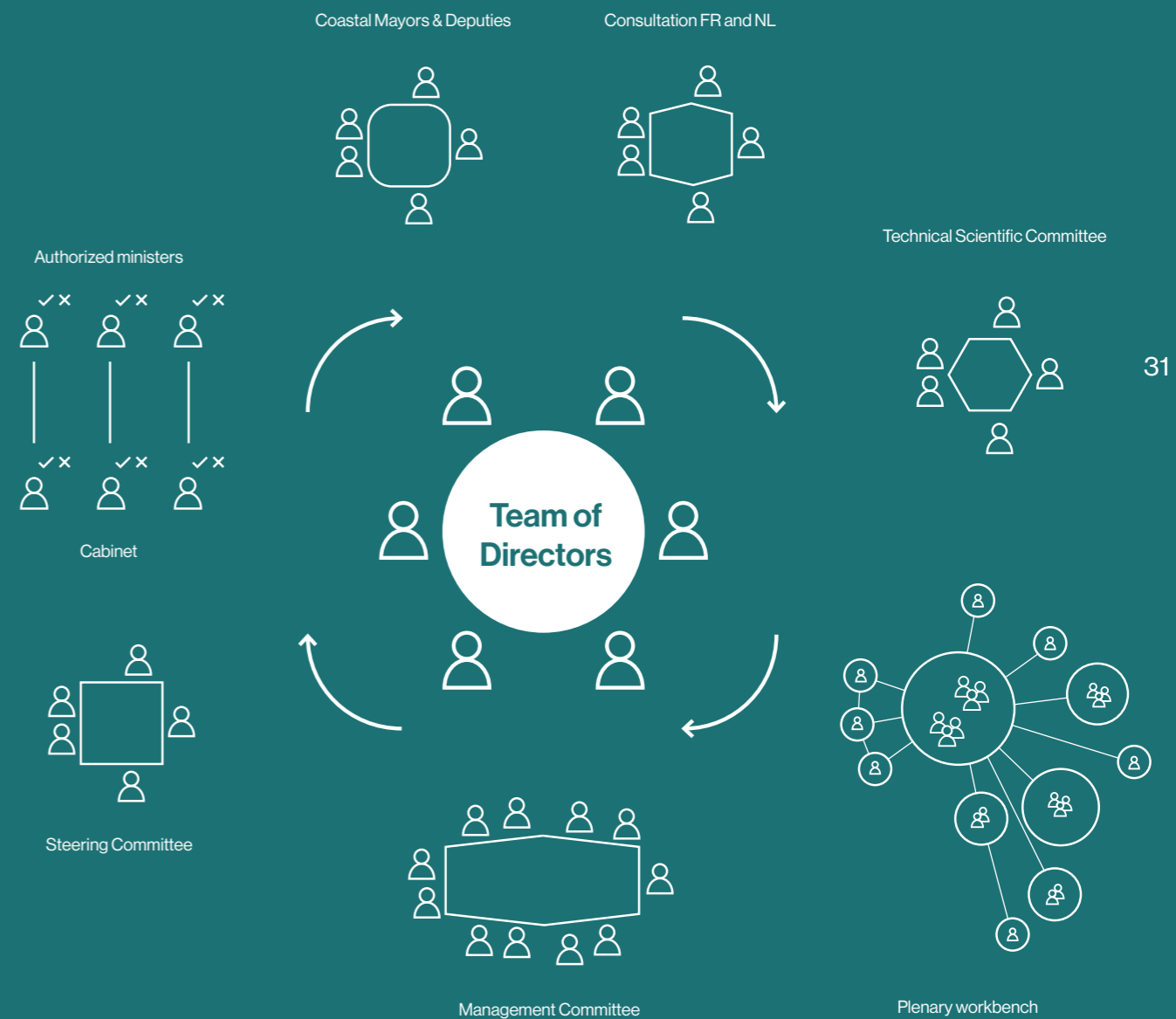
To ensure an integrated approach at all levels, Coastal Vision will in future fall under the Ministers in charge of Mobility and Public Works, Environment and Tourism. And when necessary, coordination will take place with the federal minister responsible for the North Sea.

On a recurring basis, coordination will be done with the coastal mayors. Here, the governor retains his role as advocate and consensus builder.

Consultation with our neighbouring countries France and the Netherlands will be organised at regular intervals.

A Technical Scientific Committee will serve as a scientific sounding board.

This solution-oriented dynamic is steered, driven and coordinated by a Team of Directors. The Team of Directors will include representatives from various policy fields, reflecting the diversity of challenges and interests. All together, they will soon guarantee the promising coastal protection we aim for with Coastal Vision!





Public consultation

The two-year process of Co-creative Design is followed by a procedural process. During this period the preferred alternatives for the beaches and ports are presented to the general public.

To this end, we organise information moments along the coast, we hang posters in busy places and we distribute magazines. We also have a website (www.kustvisie.be) to communicate about the progress and we send newsletters at regular intervals.

By sporadically publishing articles on coastal protection and related issues, we stimulate the public debate, encouraging people to participate in the procedural process.

The results of this public consultation are processed by our team to eventually lead to a final proposal for the protective ribbon. This final proposal can then be approved by the Flemish Government.



Colophon

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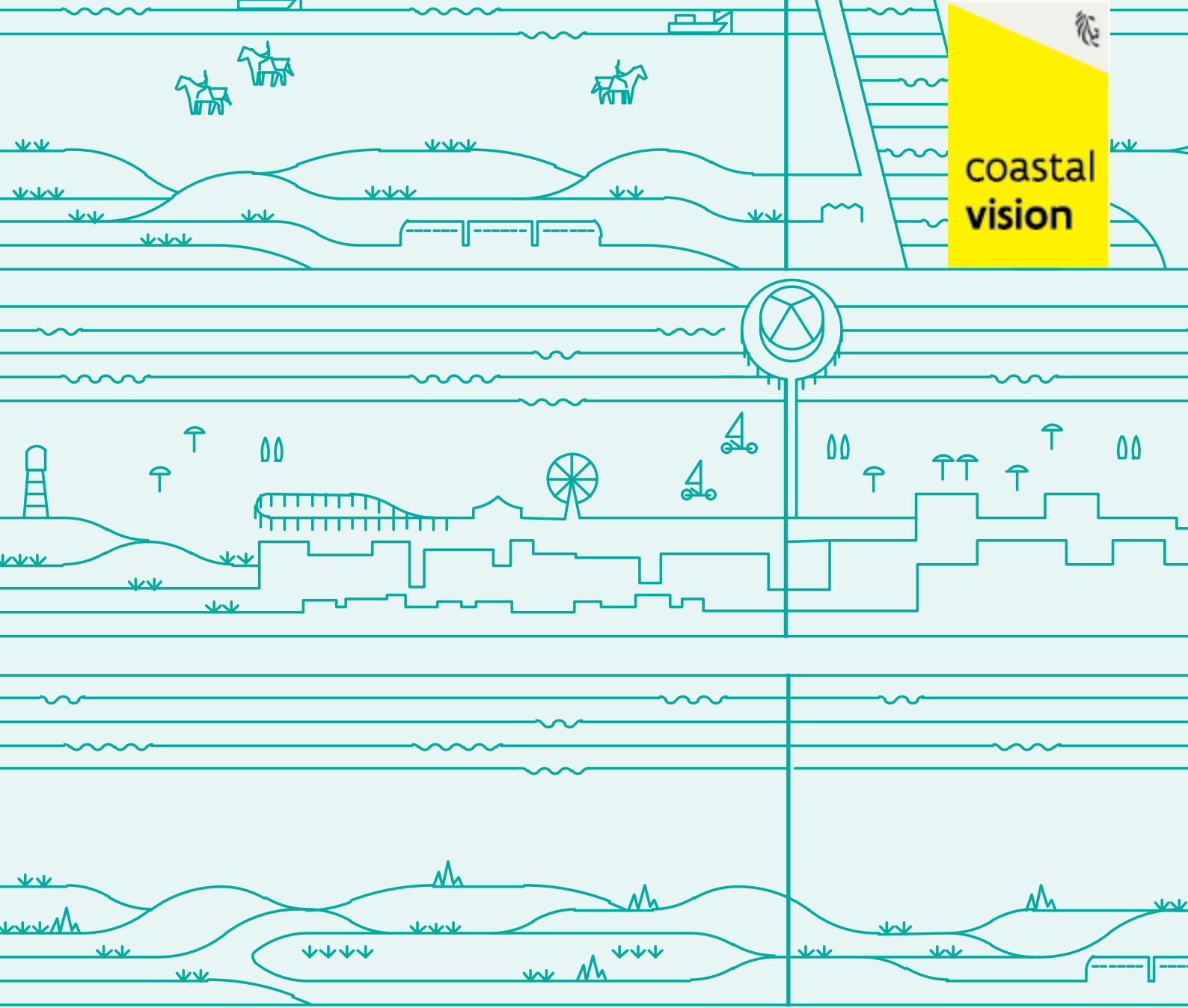
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