Application of Art. 4.7 for coastal water bodies . Project Reducing the coastal erosion in Romania

New experience in implementation of Article 4.7 of the Water Framework Directive (WFD) in the Danube Region

Bratislava , Slovakia

12th September 2018

National Administration Romanian Waters

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2. **Procedural steps for issuing the water management permit**
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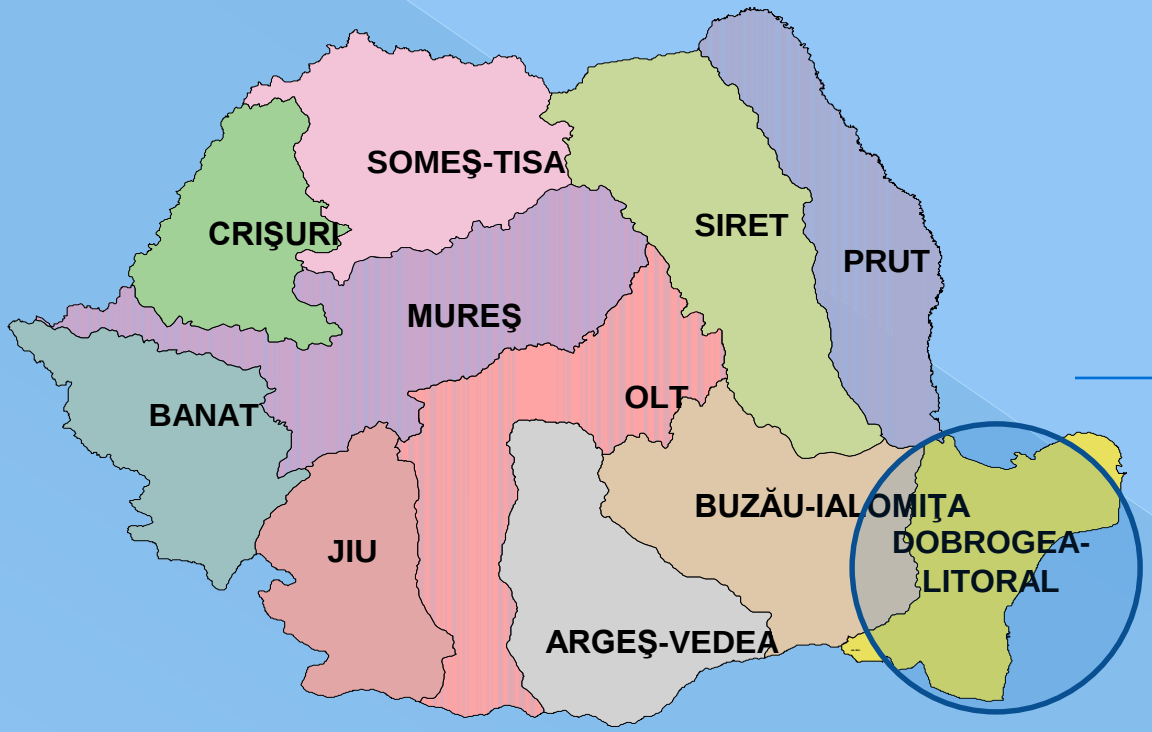
1. General information



Golful Musura – Vama Veche: 244 km

6% from total shore length

Marine transitory waters – 128 km

Coastal waters – 116 km

National Administration Romanian Waters

Coastal Erosion Master Plan
Strategic vision on coastal erosion

Average of erosion rate ~ 1 m/yr.
Estimated 3-5 m/yr. in 2030

Rate of erosion

>> 0,15m.yr.

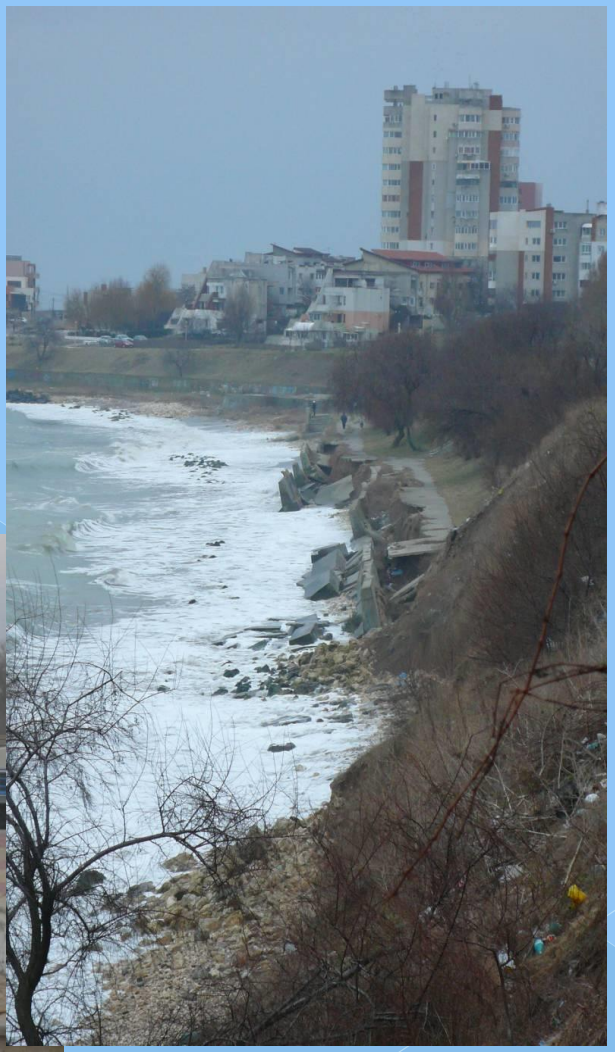
>> 1,5m.yr.

>> 1,5m.yr.

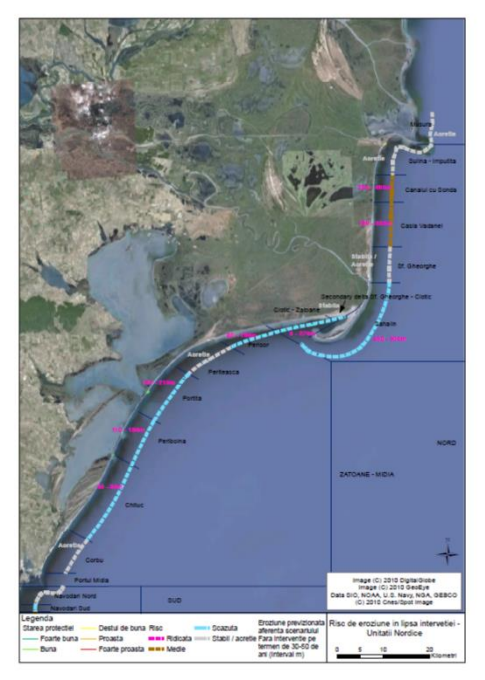
>> 2 m yr.

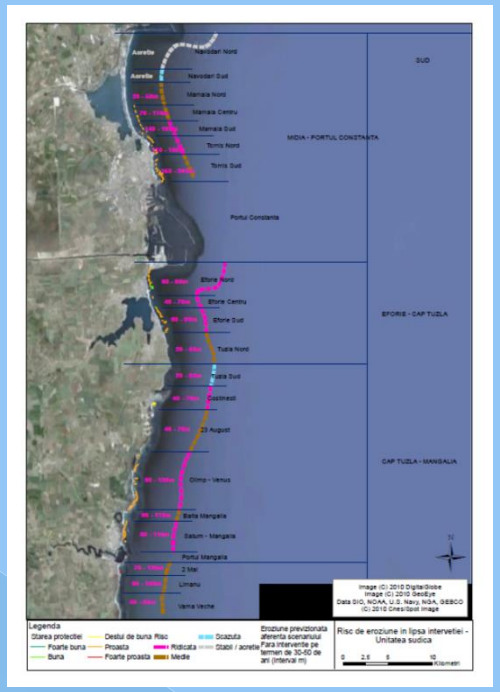
>> 3m yr.

Major erosion of the coast line



Conclusions of the Master Plan



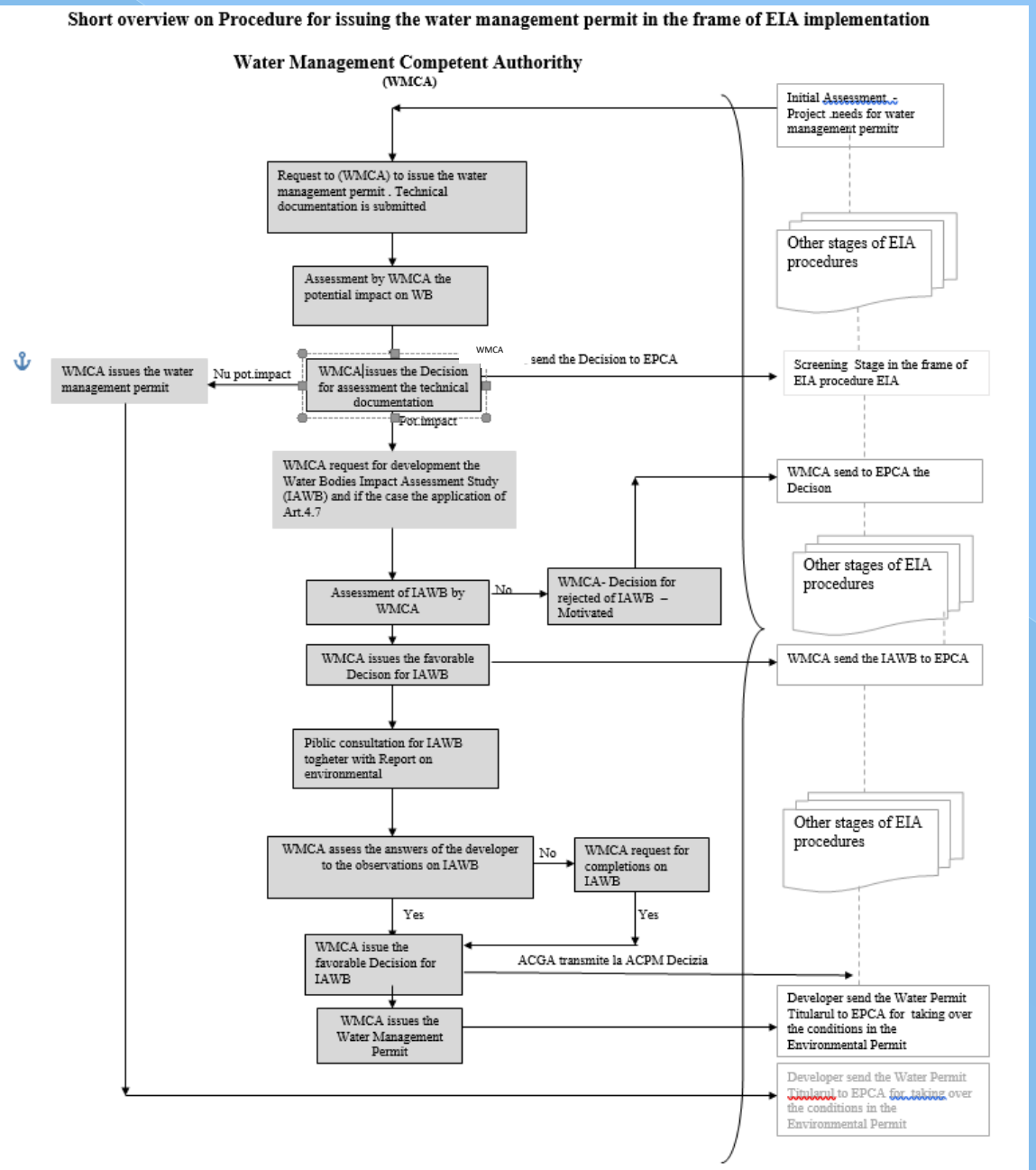


- Northern Unit
- not a priority in terms of erosion that is most natural shore
- it is preferable that natural processes to take place without intervention especially in protected areas
- exception between Sulina and St. George where erosion is attributed to anthropogenic factors

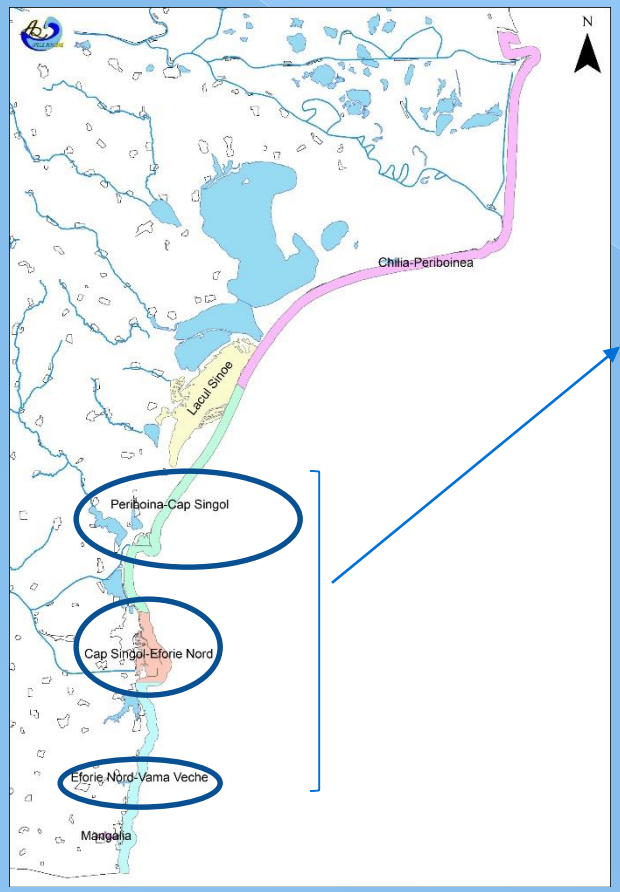
Southern Unit

- Critical areas of erosion with an advanced state of degradation of erosion infrastructure
- Beaches are subject to intense erosion:
- Subject to significant risk:
- existing buildings
- tourist beaches
- protected areas

Procedural steps for issuing the water management permit



2, **Impact assessment on CWB**



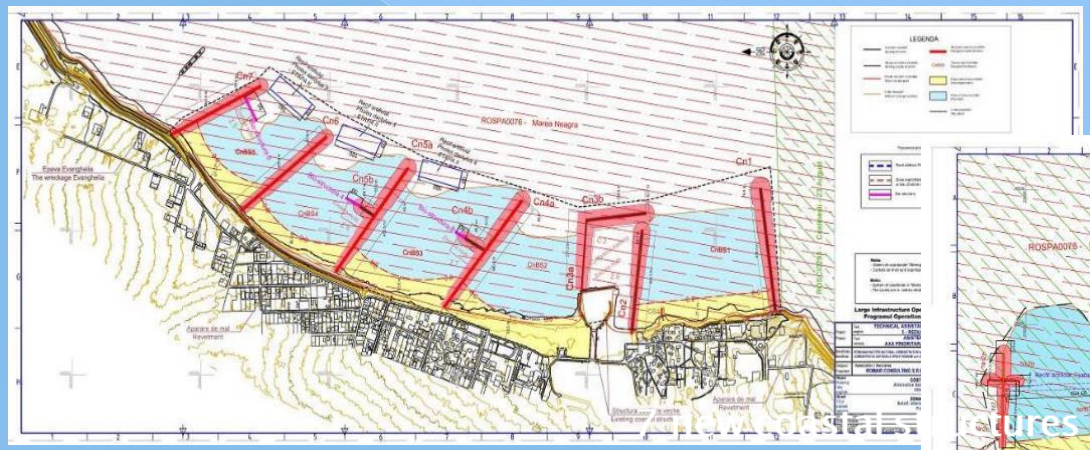
Project area

WB	EUSWB Code	Type
Periboina - Cap Singol	ROCT01_B1	Natural
Cap Singol - Eforie Nord	ROCT02_B1	HMWB
Eforie Nord - Vama Veche	ROCT02_B2	Natural

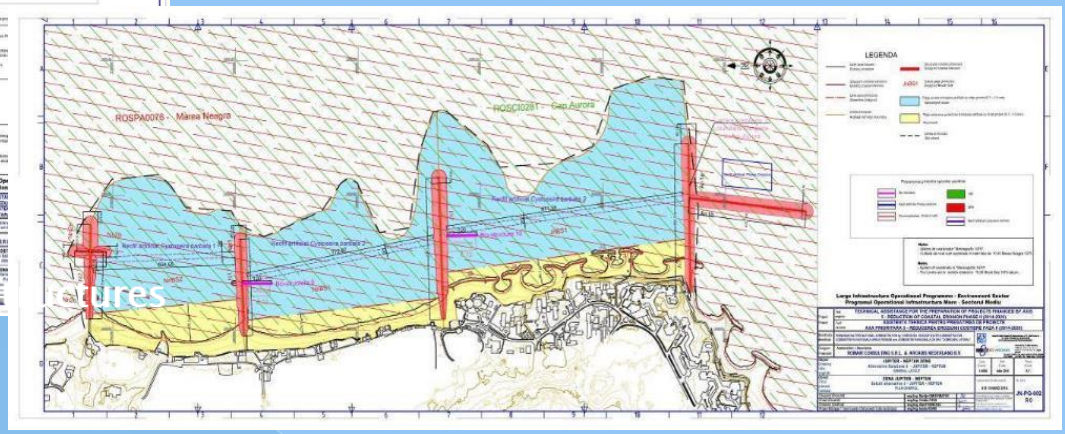
Types of Works

- Removing of some existing coastal structures;
- Development of new coastal structures;
- Extension of beaches.

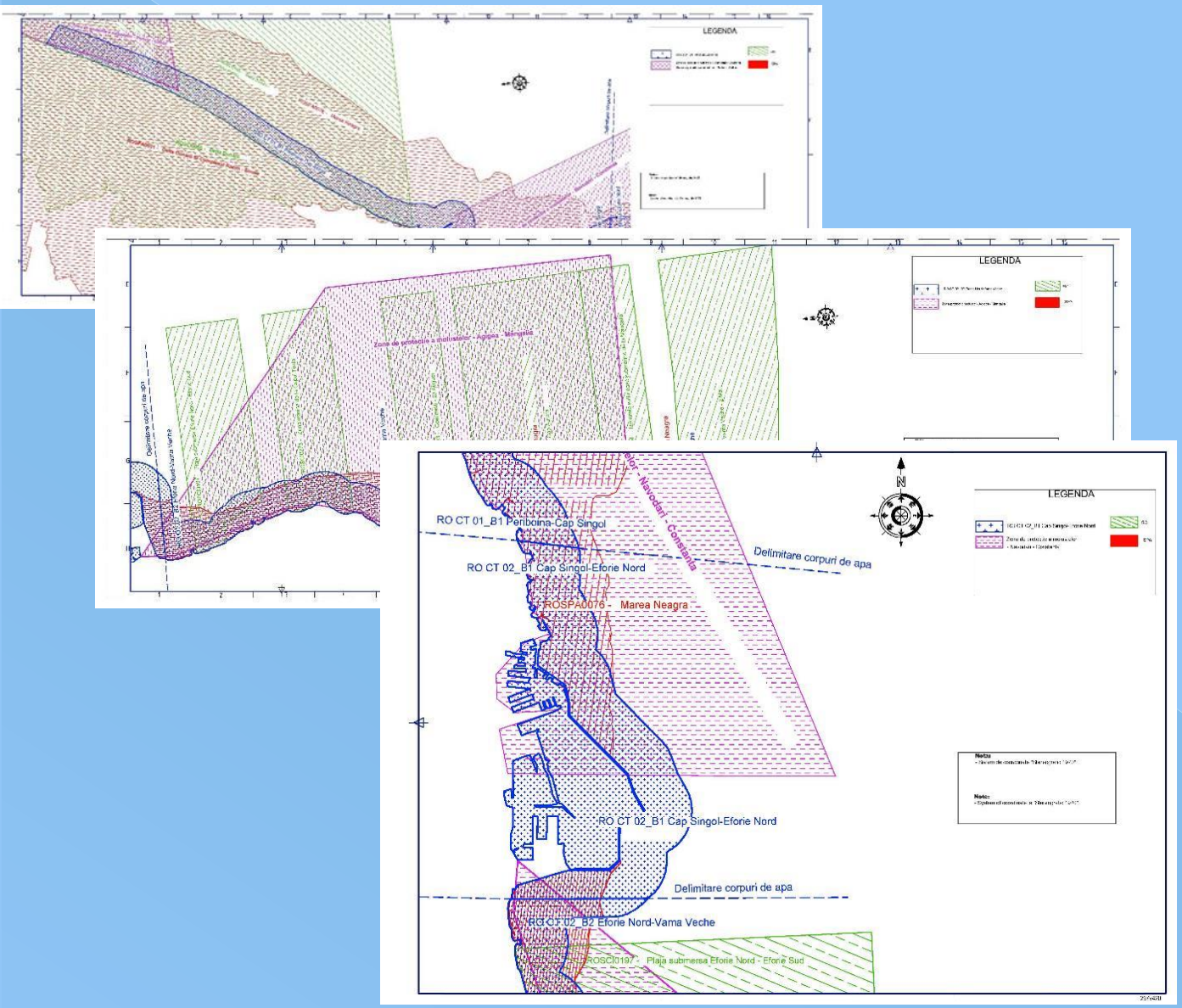
Examples of works : Costinesti area area



Jupiter – Neptun Area

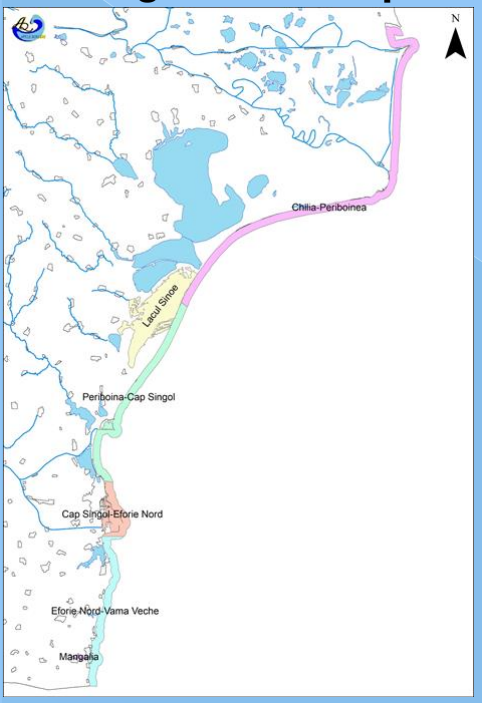


- 7 new coastal structures
- Beach sand recharge
- 3 bio strucures – *Zostera noltii*
- Artificial reefs



Protected area in and outside of CWBs related to the project
4 shellfish breeding area
SCI
SPA

Ecological status/potential 2015



Ecological status/potential 2016

WB	Type OF wb	phytoplankton	benthic invertebrate fauna	Macroalge si Angiosperme	Chemical and physico-chemical	Specific pollutants	Chemical status	Ecological status/Ecological potential
Periboina - Cap Singol	Natural	Moderate	Good	Bad	Moderate		Good	Bad
Cap Singol - Eforie Nord	HMWB	Very Good	Very Good		Moderate			Moderate
Eforie Nord - Vama Veche	Natural	Moderate	Good	Bad	Moderate		Good	Bad

Ecological status/potential 2013

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Periboina - Cap Singol	Natural	Very Good	Very Good	Bad	Moderate	Good	Good	Bad
Cap Singol - Eforie Nord	HMWB	Good	Very Good	Bad	Moderate	Good	Good	Bad
Eforie Nord - Vama Veche	Natural	Moderate	Very Good	Good	Moderate	Very Good	Good	Moderate

WFD compliance assessment cause-and-effect mechanisms
(Based on preliminary checklist tool developed by JASPERS)
Hydromorphological supporting elements

WB Periboina – Cap Singol

WFD elements and sub-elements	Is there a possible causal mechanism for a direct effect on…?[1]	Is there a possible causal mechanism for an indirect effect on…?[2]
Hydromorphological supporting elements		
Morphology: depth variation	Yes	Yes
Morphology: bed structure, substrate	No	No
Morphology: intertidal zone structure	No	No
Tidal regime: dominant currents direction	No	No
Tidal regime: wave exposure	No	No

WB Cap Singol – Eforie Nord

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WB Eforie Nord Vama Veche

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WFD compliance assessment cause-and-effect mechanisms
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Physico-Chemical supporting elements

WB Periboina – Cap Singol

WFD elements and sub-elements	Is there a possible causal mechanism for a direct effect on…?[1]	Is there a possible causal mechanism for an indirect effect on…?[2]
Physico-chemical supporting elements		
Transparency	Yes	Yes
Thermal conditions	No	No
Oxygenation	No	Yes
Salinity	No	No
Nutrient conditions	Yes	Yes
Specific synthetic pollutants (se va avea in vedere in special hidrocarburi totale)	No	Yes
Specific non-synthetic pollutants(se va avea in vedere in special Cu, Cr)	No	Yes

WB Cap Singol – Eforie Nord

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WFD compliance assessment cause-and-effect mechanisms
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Biological elements

WB Periboina – Cap Singol

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Biological quality elements		
Phytoplankton	Yes	Yes
Macroalgae	Yes	Yes
Angiosperms	Yes	Yes
Benthic invertebrate fauna	Yes	Yes

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WFD compliance assessment scoping table
(Based on checklist tool developed by JASPERS)
Hydromorphological supporting elements

WB Periboina – Cap Singol

Under each heading, identify the sub-element(s) that could potentially be affected by the project	✓	Will the effect be temporary?	Will the effect be insignificant at the scale of the water body? Yes/No/Uncertain
Hydromorphological supporting elements			
Morphology: depth variation		Yes	Yes
Morphology: bed structure, substrate		-	-
Morphology: intertidal zone structure		-	-
Tidal regime: direction of dominant currents		-	-
Tidal regime:		-	-

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Physico-Chemicals supporting elements

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Physico-chemical supporting elements			
Transparency		Yes	Yes
Thermal conditions		-	-
Oxygenation		Yes	Yes
Salinity		-	-
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Specific synthetic pollutants		Yes	Yes
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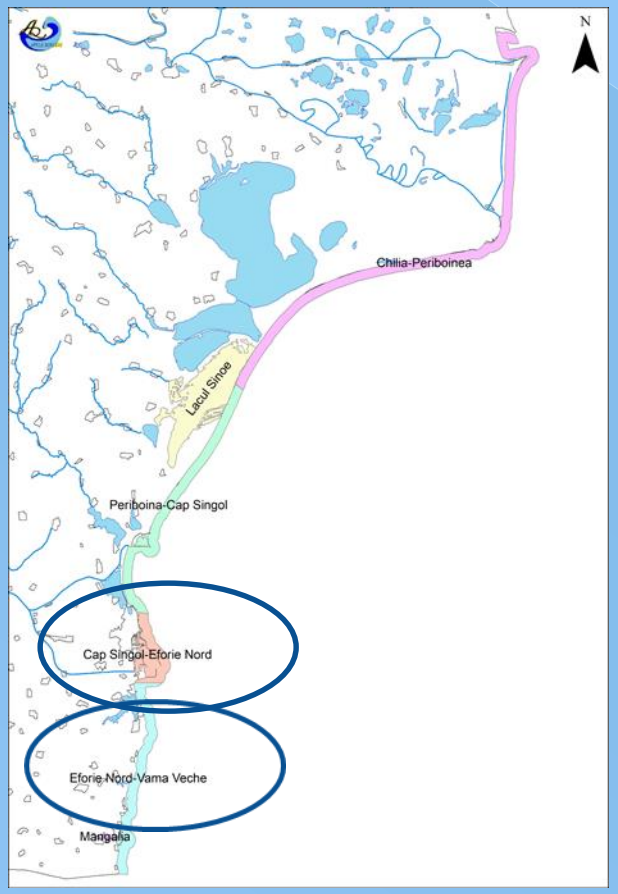


Conclusion on impact

- On morphology - bed substrate
- On transparancy

New coastal erosion defence structures

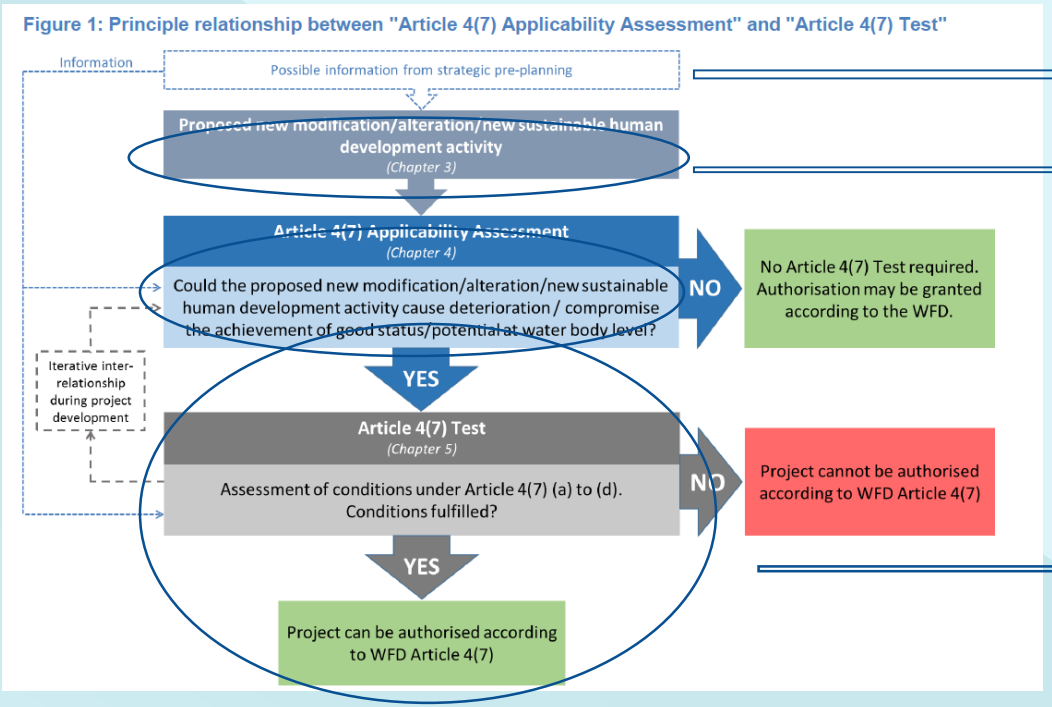
Suspended sediments

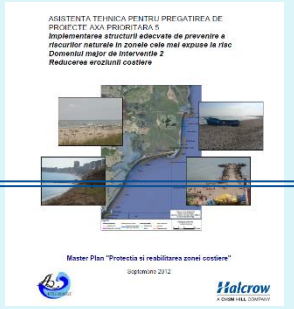
Substrate cLogging

Reducing the light penetrability

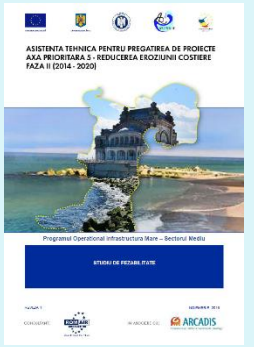
Acts on benthic inverterbates

4. Application of Art 4.7 on CWB





Coastal Erosion Master Plan



Modifications to morphological characteristics structure and substrate of the coastal bed

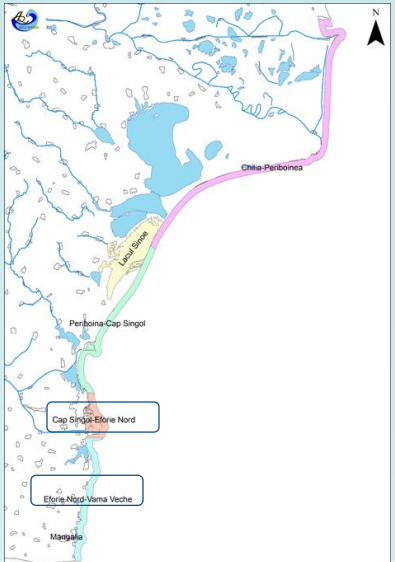
Based on the **conclusion** that the effects of the project implementation works due to their scale and duration;

The reversibility period **(2-5 yr.)** related to **benthic invertebrate fauna**., **not a certainty !**

Overlapping with assessment of ecological status in 2019 in the 3-rd WFD implementation cyclye

CIS Guidance 36-

4.7



Comply with precautionary principle laid down in the EU treaty

Fulfilling Art.4.7 conditions

All practicable steps are taken to mitigate the adverse impact on the status of the body of water

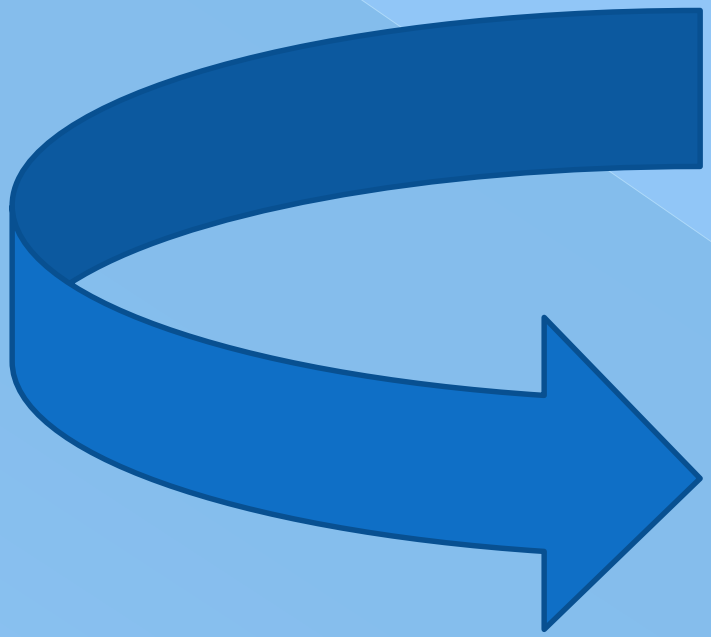
CIS Guidance : *The objective of these actions is to avoid or reduce an identified potential effect on the status of a WFD quality element*

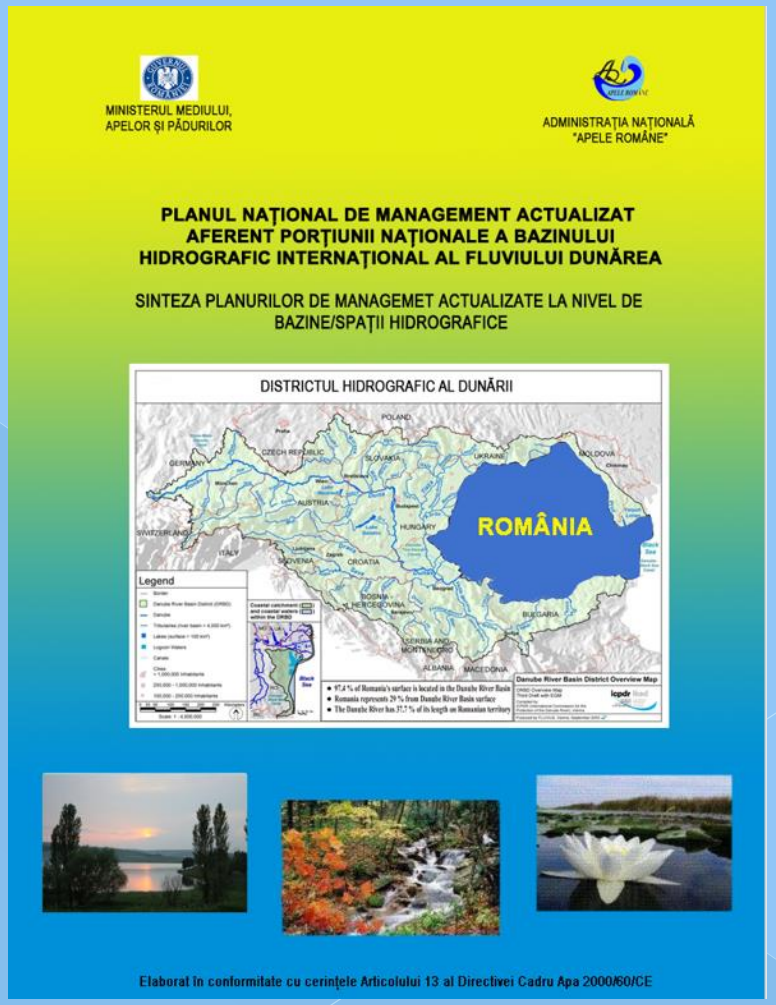
Addressed to mitigation the impact of morphological QE & Biological QE;
- (e.g) reduce the surface of shapes of emerged and submerged beaches; changes in location of erosion structures);

Selecting the best available constructive solutions;
Renaturation and removal of existing coastal structures;
Phasing the construction of erosion structures and sand feeding;

Measures from Environmental Permit;
Other specific WFD measures

The reasons for those modifications or alterations are specifically set out and explained in the river basin management plan required under Article 13 and the objectives are reviewed every six years;





The reasons for those modifications or alterations are of overriding public interest *and/or the benefits to the environment and to society of achieving the objectives set out in paragraph 1 are outweighed by the benefits of the new modifications or alterations to human health, to the maintenance of human safety or to sustainable development, and*

CIS Guidance 36

…plans or projects envisaged prove to be indispensable within the framework o:

- Fundamental policies for the state and the society
- Carrying out activities of an economic or social nature, fulfilling specific obligations of public services.

Coastal erosion Master Plan-
Project approved through G.D.;
Included in the list of financed projects from Operational Program for Large Infrastructure 2014-2020 SO 5.1 : : ***Reducing the effects and damage to the population caused by natural phenomena associated with the main risks accentuated by climate change, mainly by floods and coastal erosion;***

The beneficial objectives served by those modifications or alterations of the water body cannot for reasons of technical feasibility or disproportionate cost be achieved by other means, which are a significantly better environmental option.

CIS Guidance 36….*Those means or alternatives solutions could involve alternative locations, different scales or designs of development, or alternative processes.*

- 3 alternatives have been assessed
- The selected alternative follows the objectives of both WFD and HD
- extremely reduced options for other alternatives taken also into account the purpose of the project

Compliance with Art 4.8 & Art 4.9

CHALANGE

Uncertainty in forecasting of ecosystem recovery


THANK YOU FOR YOUR ATTENTION!