



EUSKO JAURLARITZA



GOBIERNO VASCO

Climate change and spatial planning in the Basque Country: The revision of the guidelines for the spatial planning (DOT)



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2018

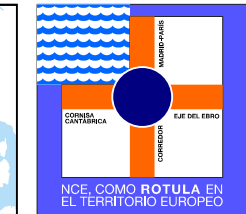
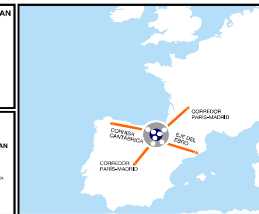
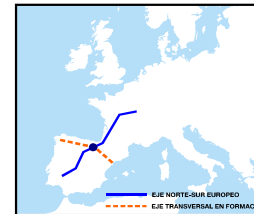


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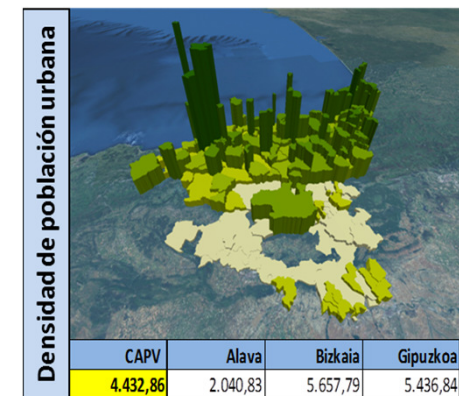
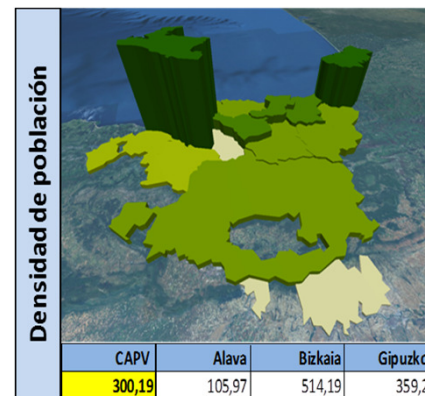
Autonomous Community of the Basque Country



Surface:	7,234.8 km ²
21% surface:	Natural spaces
Population:	2,171,866 inhabitants
Coastal population:	1,400,000 inhabitants
Cities:	Bilbao San Sebastián Vitoria-Gasteiz

Coastal territory, small, awkward relief.

Metropolitanized with a high-density city model.



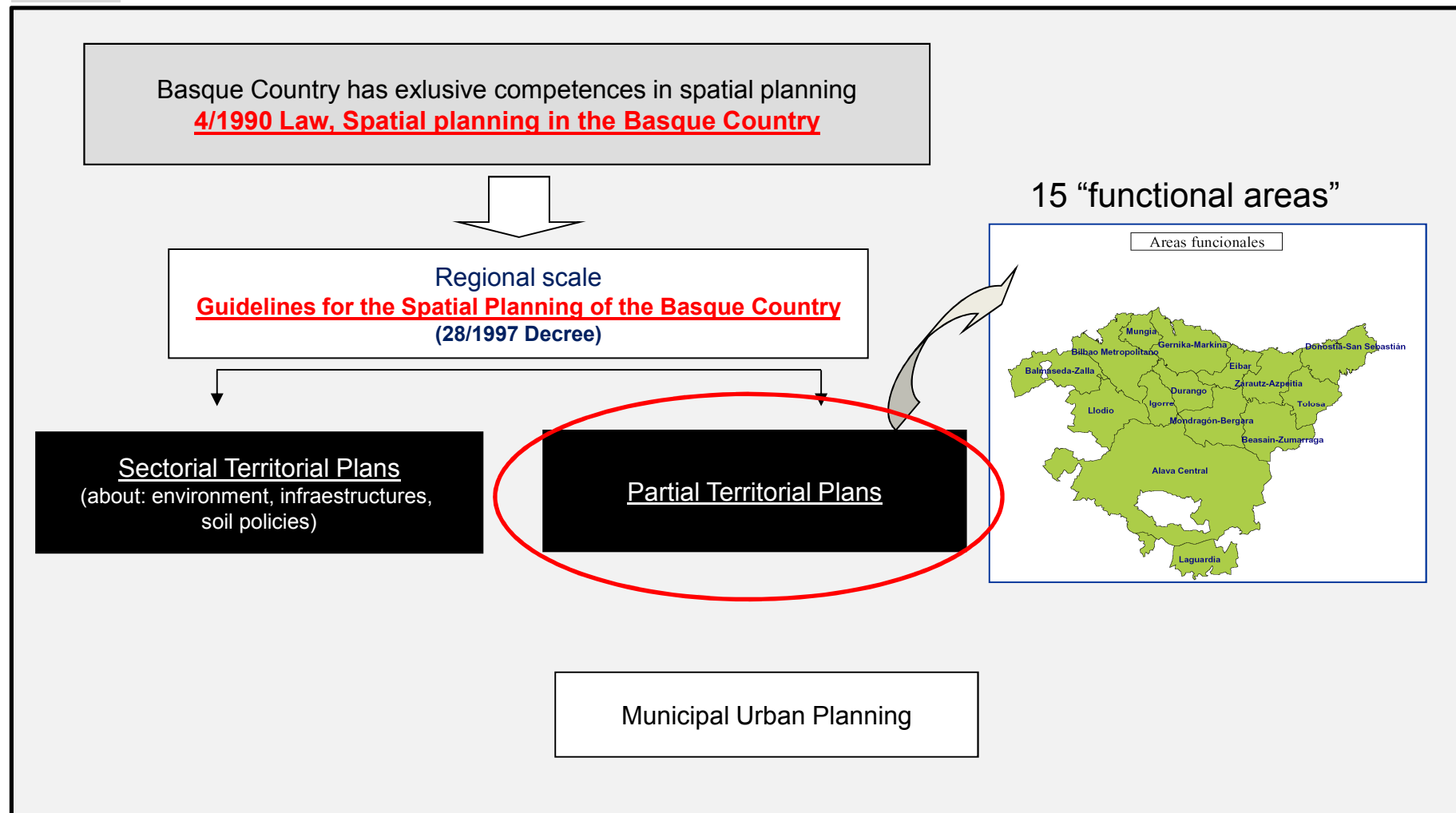


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Planning scales. Multilevel approach





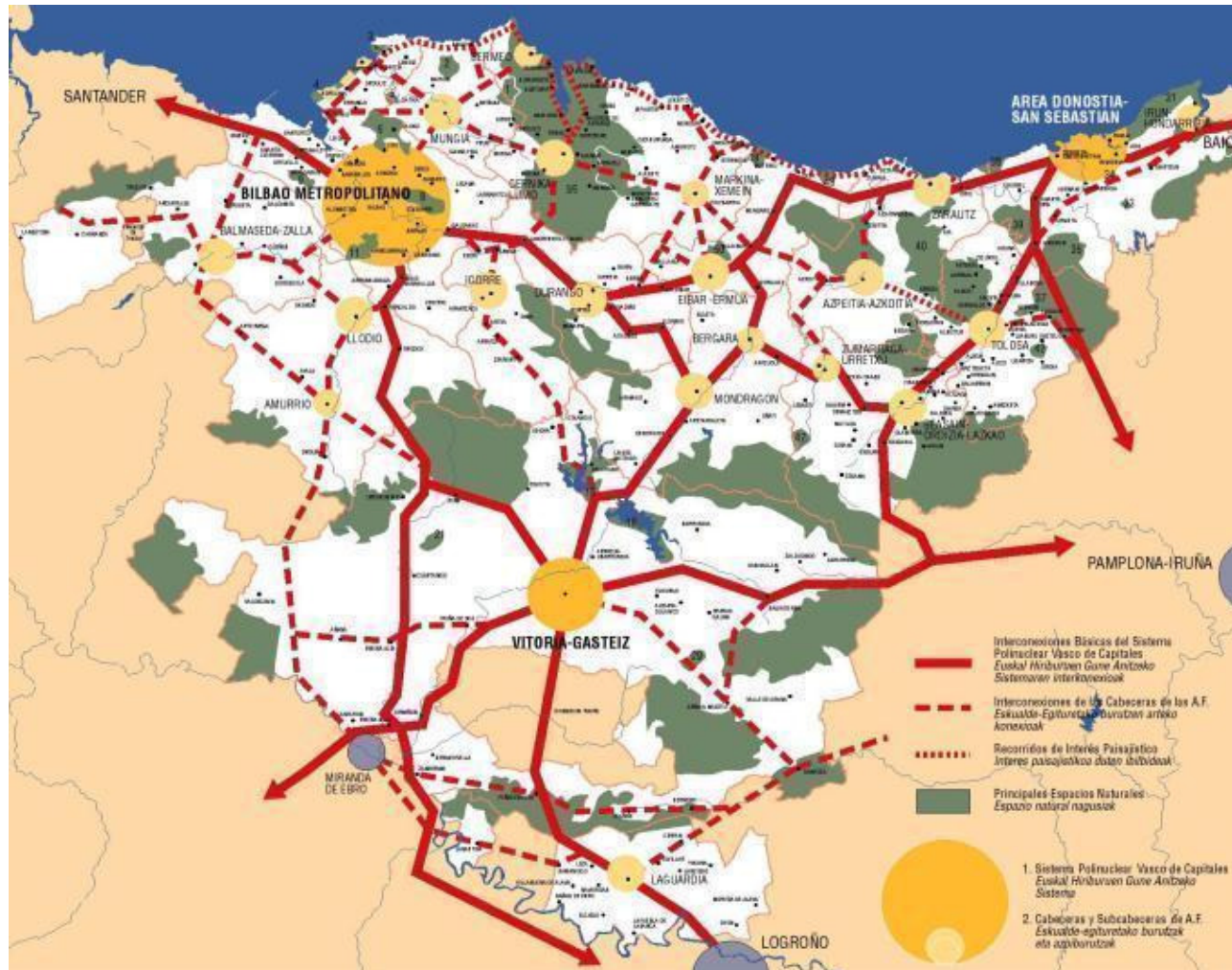
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GUIDELINES FOR THE TERRITORIAL PLANNING 1997:

Response to climate change from regional scale



PHYSICAL ENVIRONMENT:

- **Soil categorizing**
- (forest, agricultural land, protection of wetlands, etc.)
- **Identifying risks**
(floodplains, slippings, etc.)

URBAN HIERARCHY:

(residential and industrial quantifying)

RELATIONAL SYSTEM:

- ▶ **Adapting uses to network**
- ▶ **Sustainable mobility**

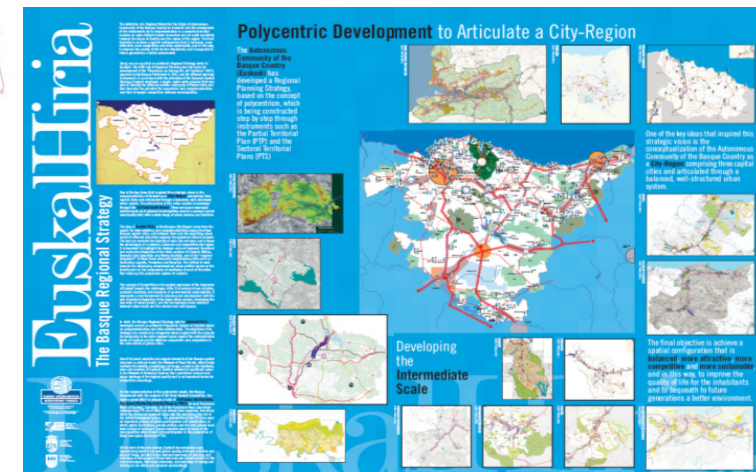


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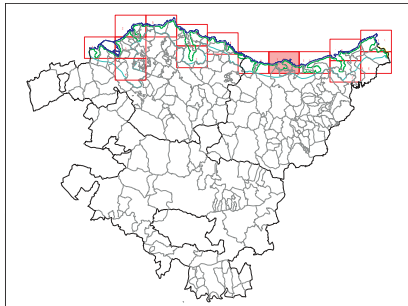
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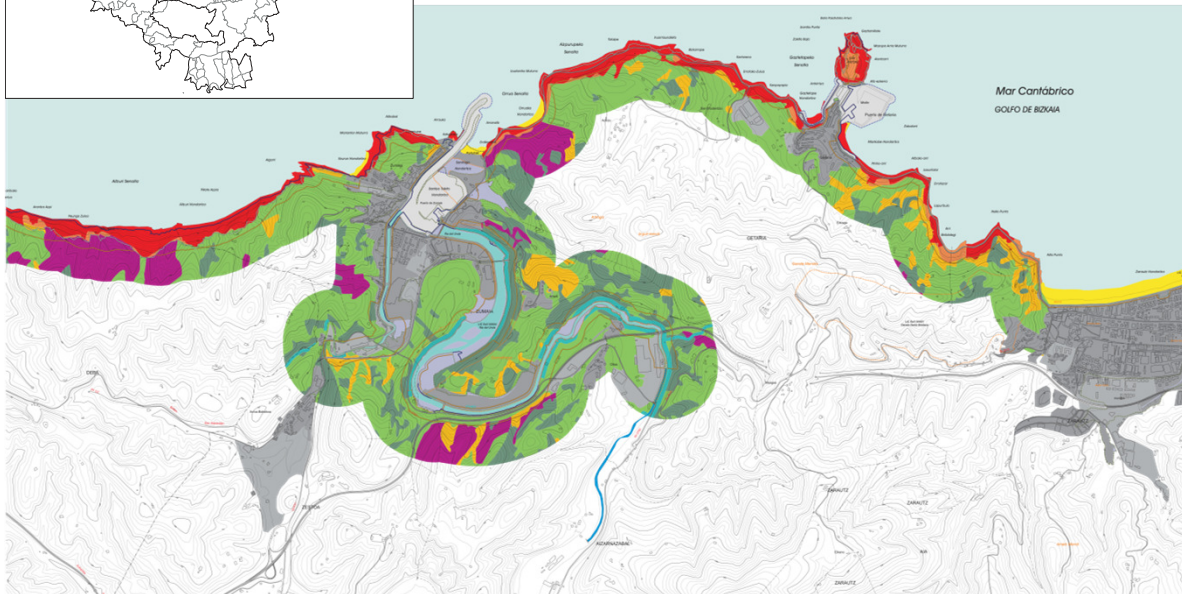
PARTIAL TERRITORIAL PLANS: 15 Functional areas Intermediate scale: setting criteria at a comarcal scale



2006 European urban and regional planning Awards



Sectorial Territorial Plan for the Protection of the Coast (43/2007 Decree)



LEGENDA	LEYENDA
Itsaso	Mar
Itsasadar	Ria
Ibai	Rio
Antolamendurako Kategoriak	Categorías de ordenación
Babes Berezia	Especial Protección
Babes berezi zorroza	Especial protección estricta
Babes berezi batzargarria	Especial protección compatible
Ingunerua hobetzeko	Mejora Ambiental
Ekosistemen hobetzerako eremuak	Áreas de mejora de ecosistemas
Ingunerua degradatutako berreskuratzeko	Áreas degradadas a recuperar
Basoak	Forestal
Nekazaintza, abeltzaintza eta landazabaleko eremuak	Zona agroganadera y campiña
Erabilera bereziko eremuak	Zonas de uso especial
Hiri hondartzak	Playas urbanas
Dagoeneko araututa dauden eremuak	Zonas sometidas a otras regulaciones
Estatuak portuak eta enklavatuak portuak	Puertos del Estado y Puertos Autonómicos
Hezeguneetako Lurraldearen Arloko Planen araututako eremuak	Áreas reguladas por el PTS de Zonas Húmedas
Urdailak, Txingudi eta Babestutako Natur Guneak	Urdailak, Txingudi y Espacios Naturales Protegidos
Hiri lurzorua	Suelo urbano
Lurzorua urbanizagarria	Suelo urbanizable
Isaien eta Erreken Entrak antolatzeak Lurraldearen Arloko Planen araututako eremuak	Áreas reguladas por el PTS de Márgenes de Ríos y Arroyos
Natura 2000 sareak	Red Natura 2000
Oharra: Natura 2000 sarean proposatzen diren zenbait eremu ez dira irudikatu, dagoeneko araututakoak direlako	Nota: Algunas de las zonas propuestas de la Red Natura 2000 no han sido representadas, al coincidir con otras regulaciones
Itsas ertzen mugaketa	Deslindes de Costas
Itsas baxiera (behin behinekoa)	Ribera del mar (definitiva)
Itsas baxiera (behin behinekoa)	Ribera del mar (provisional)
Mugaketa (behin behinekoa)	Deslinde (definitivo)
Mugaketa (behin behinekoa)	Deslinde (provisional)
Behin-behinean onartutako babes-eremuko eremuak (Itsasertzeko Legearen 25. artikulua)	Servidumbre de protección definitiva (Artículo 25. Ley de Costas)
Behin-behinean onartutako babes-eremuko eremuak (Itsasertzeko Legearen 25. artikulua)	Servidumbre de protección provisional (Artículo 25. Ley de Costas)



Coast in the Basque Country:

- Sea
- Effects of the tides. Estuaries

Sectorial Territorial Plan criteria

- Zoning
- Protection of the coast



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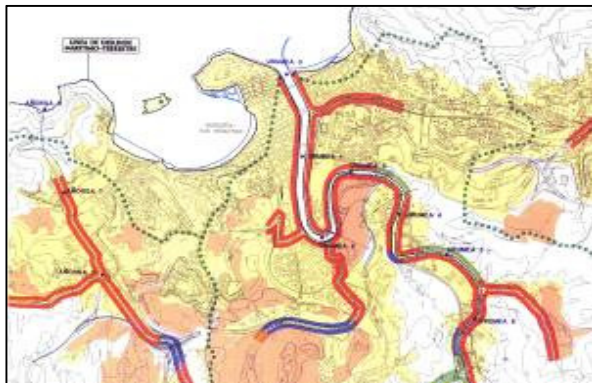


Sectorial Territorial Plan for the Protection of Rivers and Streams:

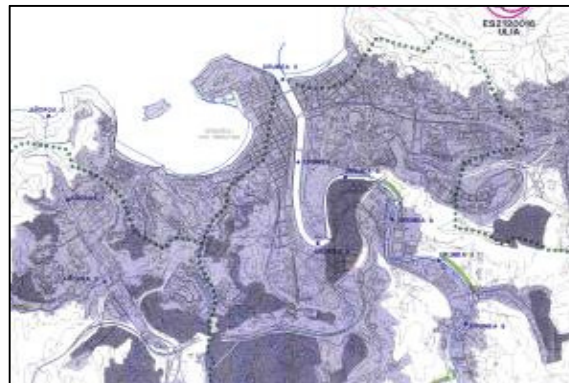
- ▶ Cantabric watershed 415/1998 Decree
- ▶ Mediterranean watershed 475/1999 Decree

Floodplains: Adapting to the European 2007/60/CE Water Framework Directive:

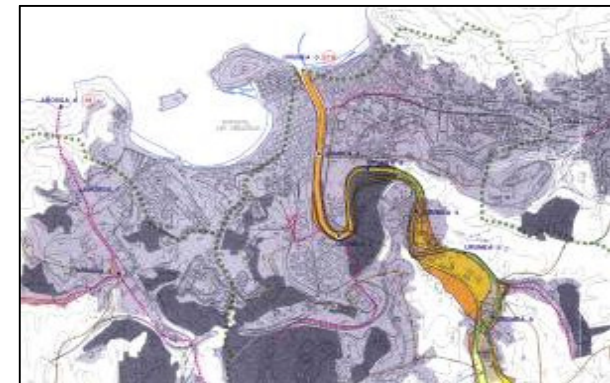
- ▶ 449/2013 Decree



Urban component

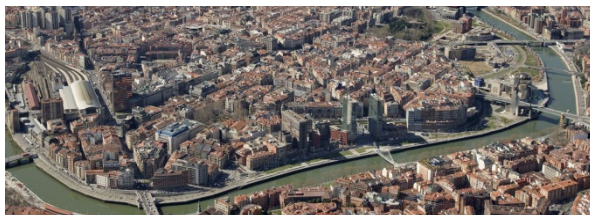


Environmental component

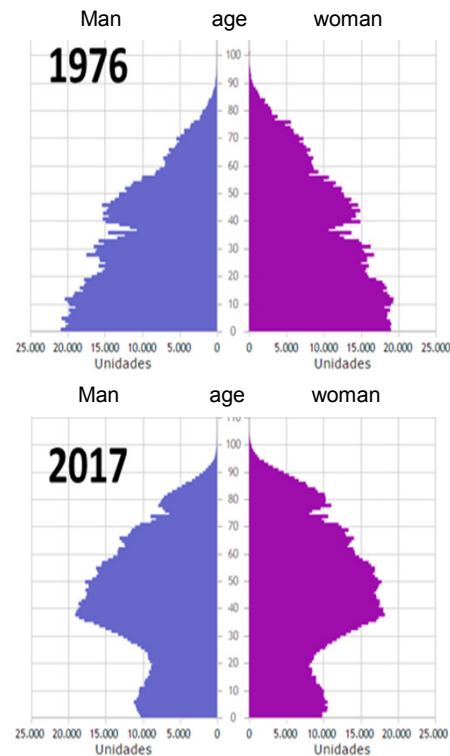


Hydraulic component

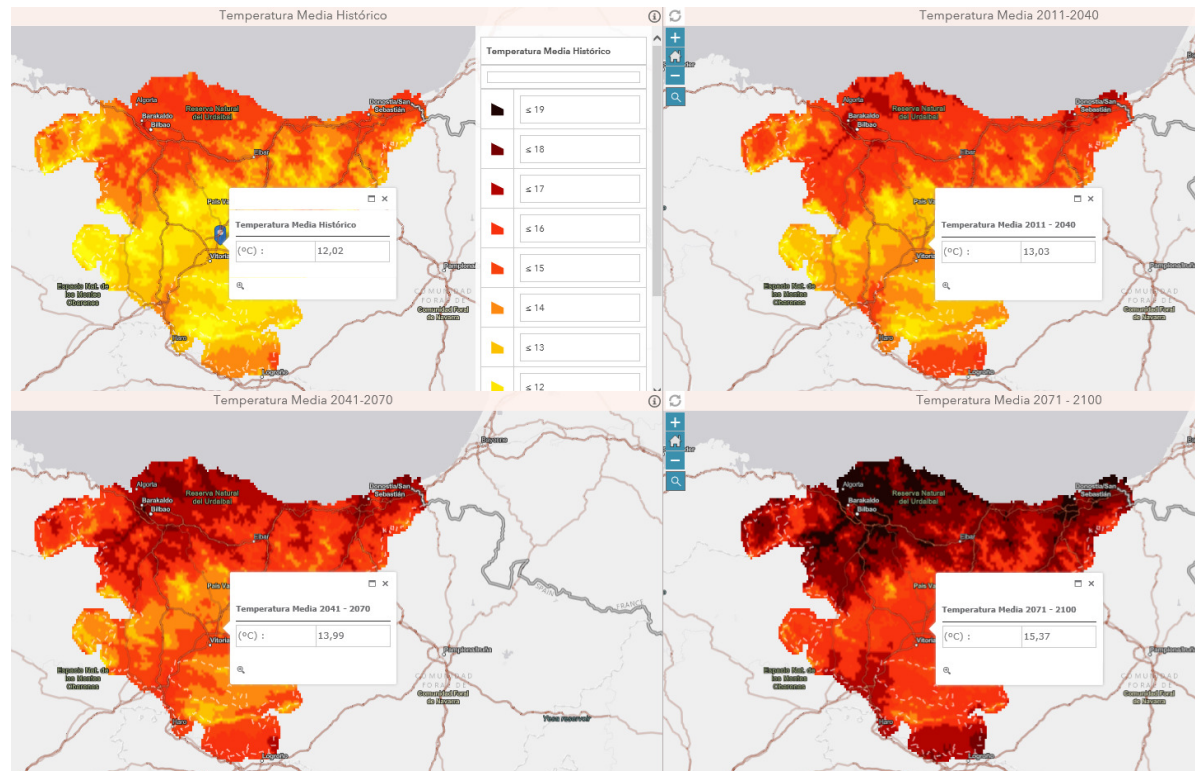
- Integration of the three components: urban, environmental and hydraulic
- Taking care of riverbanks
- Stream coverages elimination



Socioeconomic context



Climate Change



Sea level rise (end of 21st century)	Precipitations Decresse	Temperatures incesse
29-49cm	10-30% Mediterranean watershed 10% Cantabric watershed	Winter 1,5° - 2,5° Summer 4,5° - 7°

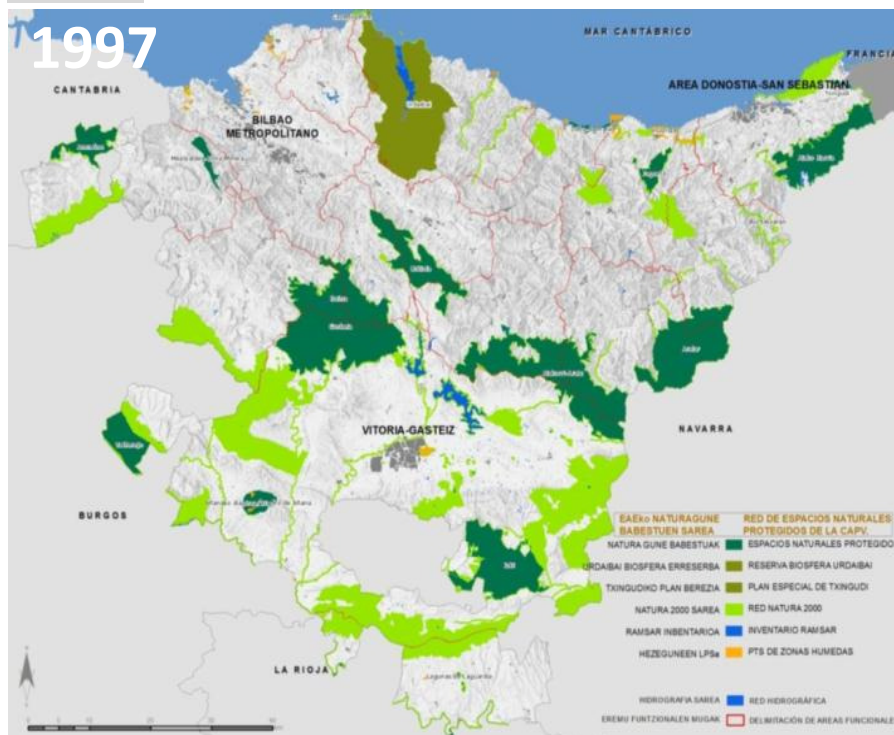


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Green infrastructure



COMPONENTS: protected spaces + ecological corridors + blue network

CRITERIA: protection tools unification, territorial fragmentation mitigation, prevalence over grey infrastructure.

NATURE-BASED SOLUTIONS; ECOSYSTEM SERVICES

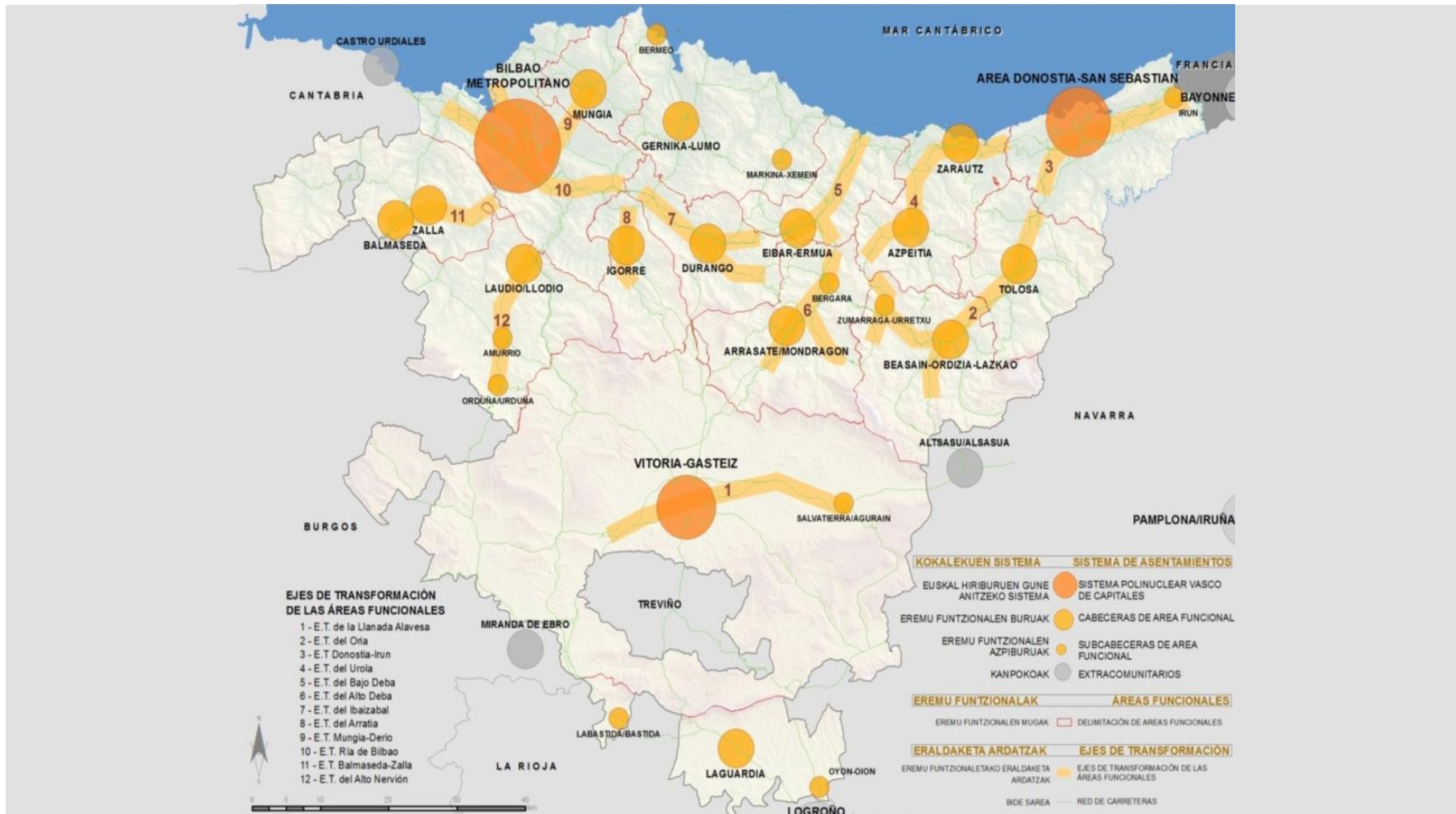


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URBAN SYSTEM: Capitals polynuclear system + functional areas heads + transformation axis (“Ejes de Transformación”)





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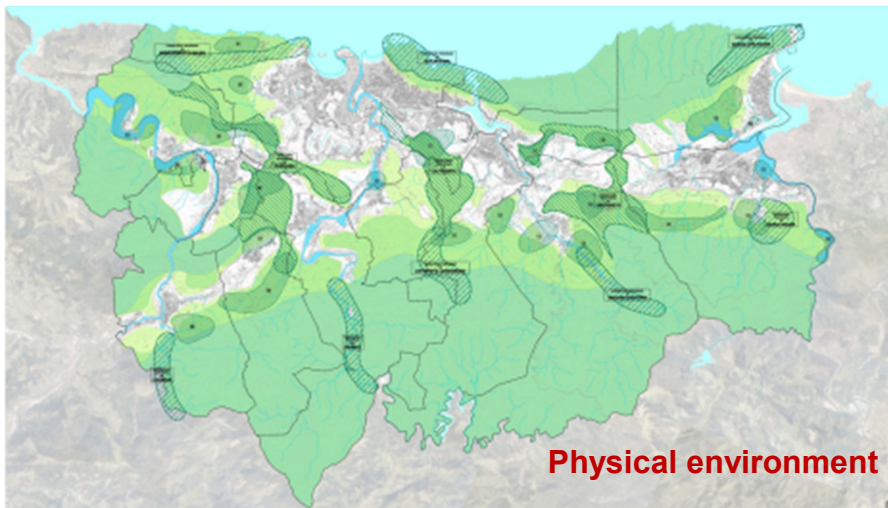
URBAN HABITAT: urban growth perimeter. Limit soil artificialization **Urban regeneration and redensification**

Basque country as a finite territory.

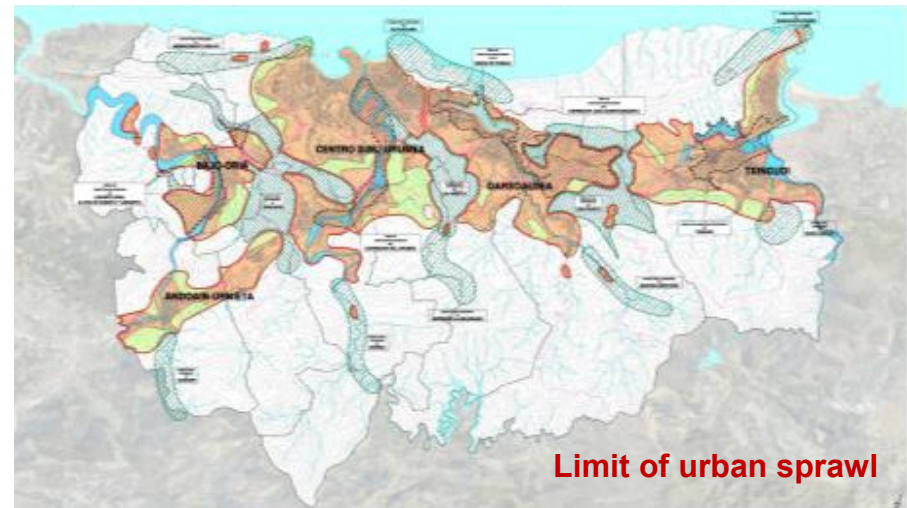
Priority to densification and urban regeneration

Perimeters which limit urban sprawl

Critical factors that have an impact on environments quality and on natural resources management.

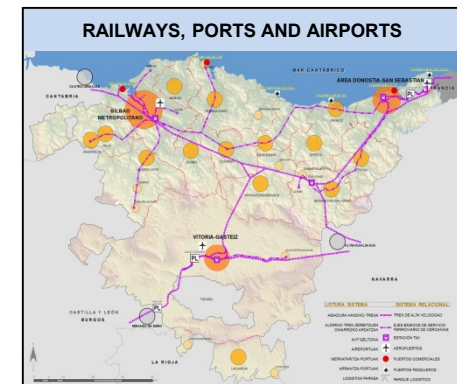
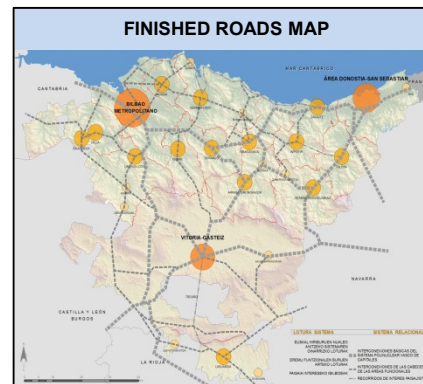


Physical environment



Limit of urban sprawl

Sustainable mobility and logistics



Resources sustainable management

WATER:

Sectorial Territorial Plan for the Protection of Rivers and Streams in the Basque Country is an example of administrative agreement and of integration of environmental, hydraulic and urban variables.



ENERGY:

Energetic efficiency and renewable energies are essential requirements for territorial sustainability and for fighting against climate change



CIRCULAR ECONOMY:

The transition towards a circular economy based model:

- A. Waste management
- B. Soil as resource





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CROSSING ISSUES: Climate Change

*“We are the first generation to feel the effect of climate change
and the last generation who can do something about it.”.*

2015. Barack Obama, President of USA

2015 “Basque Country strategy against climate change 2050. KLIMA 2050”.

Aims:

1. **Reduce greenhouse effect gas** emissions in at **least 40% in 2030 and 80% in 2050** compared to 2005, reaching in 2050 a consumption of **renewal energy of 40%** of final consumption.
2. Ensuring **resilience of basque territory** to climate change; this objective as a result, must be reflected in this revision of the territorial model.

**KLIMA
2050**
BASQUE COUNTRY





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Article 31.- Guidelines to reduce and adapt to climate change

1. Consider **climate change in spatial planning and urban planning**.
2. Make **theme maps** of impacts and vulnerability.
3. Promote **green infrastructure** and nature-based solutions as a way to adapt to climate change.
4. Improve **forest management and reforest** deteriorated lands.
5. **Limit soil occupation**, favor mix-use and urban regeneration, boost that **means of transport with less emissions**.
6. Strengthen **urban areas, energetic efficiency** criteria in buildings and transports, and **renewal energies**.



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A) Revision of the 2007 Sectorial Territorial Plan for the Protection of the Coast

Identify in the coastal areas the ways to adapt to the adverse effects of the
sea level elevation and of the maximum train of waves





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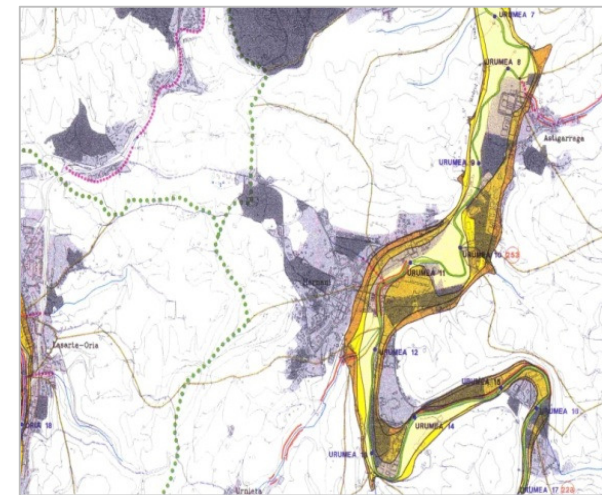
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B) Sectorial Territorial Plan for the Protection of Rivers and Streams

Give the appropriate treatment to the floodplains, with special attention to the areas where

flood determinans and coastal conditions superimpose.





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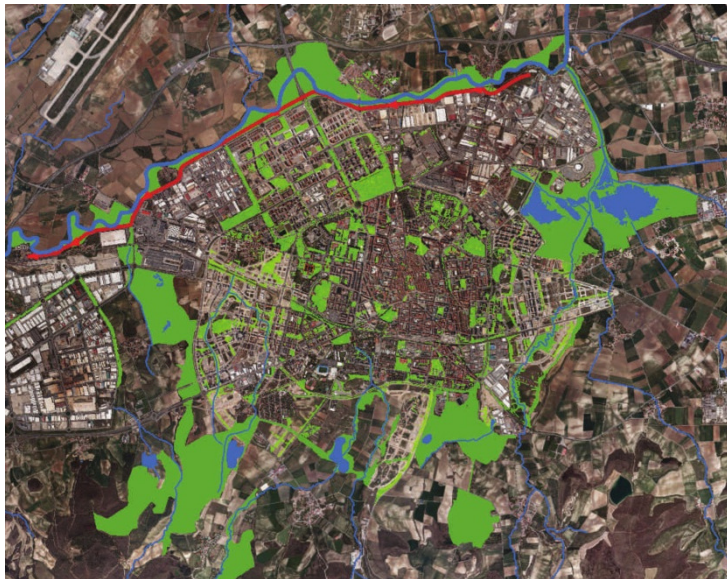
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C) Urban planning: Green infrastructure. **Vitoria-Gasteiz**

Green infrastructure and ecosystem services

(multilevel approach, multiconceptual and continue).



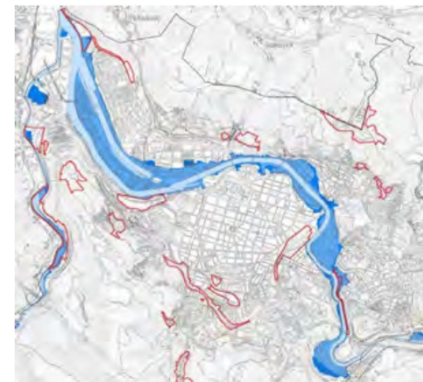
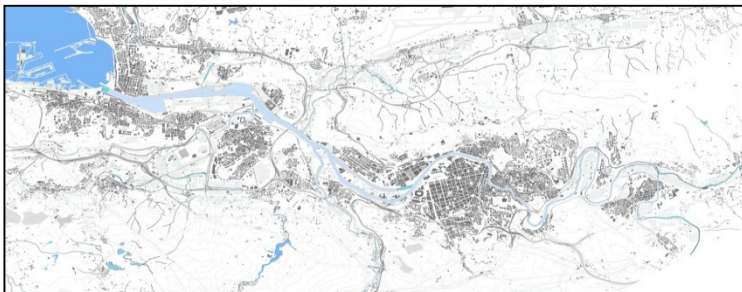


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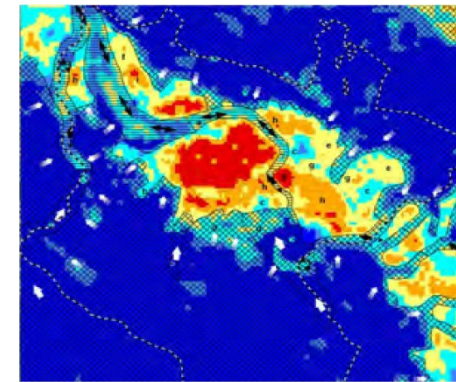
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C) Urban planning and climate change. Bilbao



Flood weakness
(RESIN)



Heat wave weakness
(Tecnalia, RAMSES)



Zorrotzaurre (Zaha Hadid). **Urban regeneration, floodplain and coast**

Transform the peninsula into an island to avoid floods; a 75 meter water channel changed into a river, buildings in a elevated platform.



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C) Urban planning and climate change. **Donostia/San Sebastián**

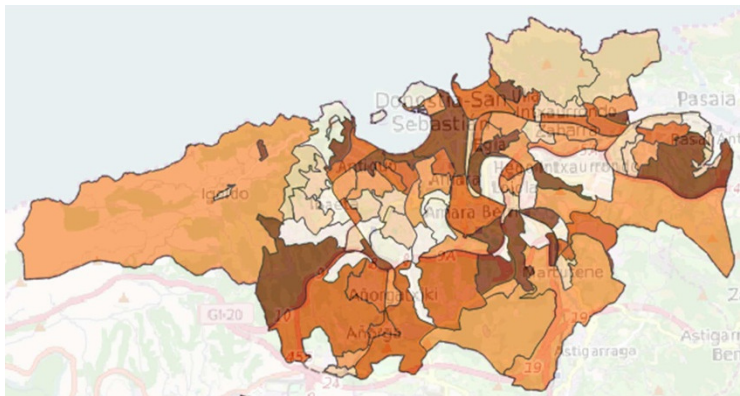


Donostiako Udala
Ayuntamiento de San Sebastián

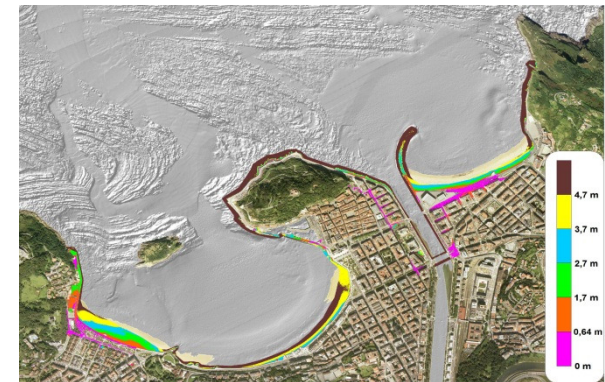


Ingurumen
Saila
Donostiako Udala

PLAN DE ADAPTACIÓN AL CAMBIO CLIMÁTICO DE
DONOSTIA/SAN SEBASTIAN, PACC_DONOSTIA



Sensibility for the chain of heat waves impact in human health



Extrem waves area. Return 50 years. Sea level rises (4cm and RCP 8,5 end 21st century.



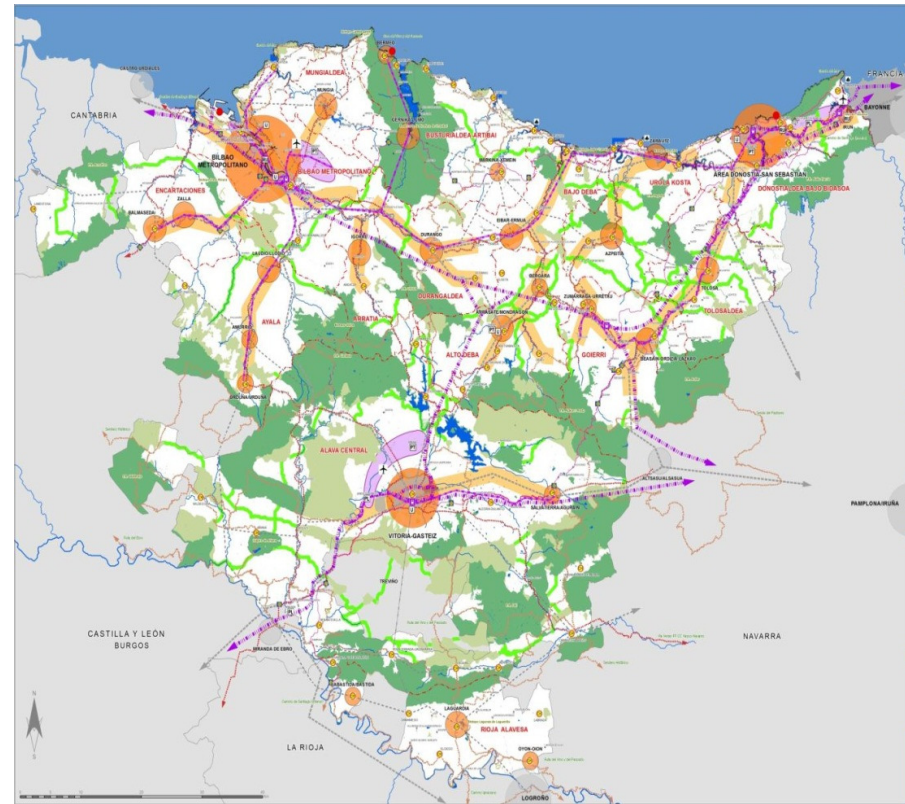
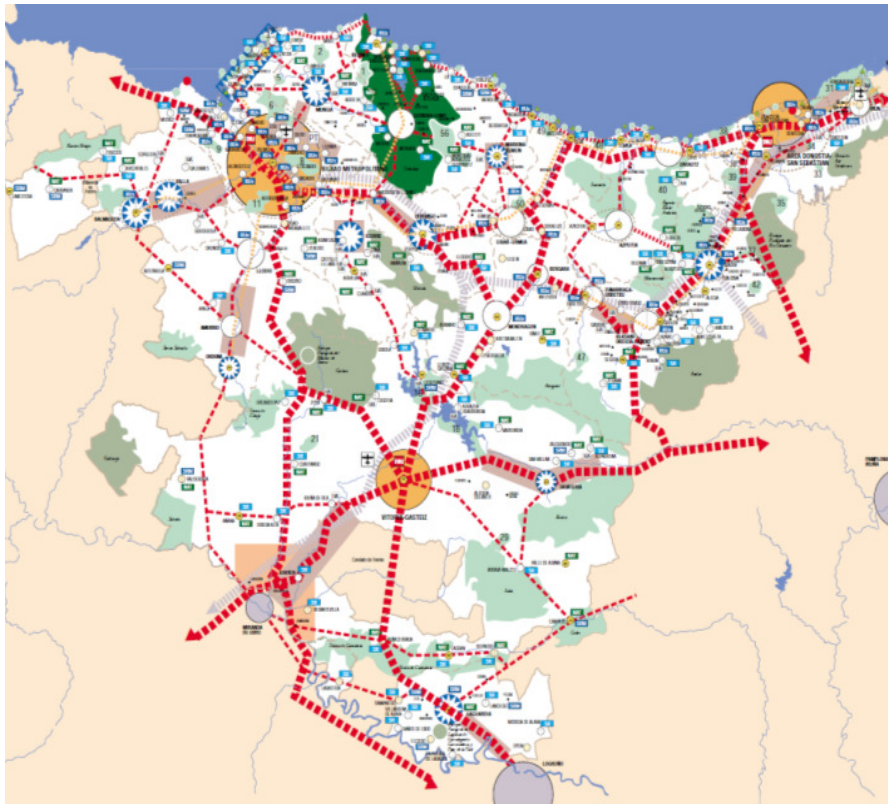


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Territorial model development:





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**MILA ESKER
MUCHAS GRACIAS
THANK YOU!**