



Congreso Nacional del Medio Ambiente (Conama 2012)
Madrid del 26 al 30 de noviembre de 2012

VITORIA-GASTEIZ EUROPEAN GREEN CAPITAL

Mas allá de 2012, hacia un sistema de infraestructura verde multifunción

ECOLOGICAL APPROACH

- _ Ecological connectivity
- _ Biodiversity
- _ Biocapacity

LANDSCAPE APPROACH

- _ Preservation of cultural and historical landscapes
- _ Restoration of natural and identity landscapes

HYDROLOGICAL APPROACH

- _ Water management
- _ Wetlands and rivers restoration
- _ Separative sewage/drainage system
- _ Aquifer depuration

AGRICULTURAL APPROACH

- _ Local production and local consumption
- _ Preservation of high quality soils

SOCIAL APPROACH

- _ Public use for sport and leisure
- _ Healthy and daily contact with nature
- _ Environmental education

URBAN APPROACH

- _ Urban growth control
- _ Shaping urban form
- _ Balancing urban-rural-natural relationship

ECONOMIC APPROACH

- _ Ecosystem services
- _ Flood control





Natural Solutions for Urban Areas in Europe: Best practices for biodiversity from European cities

Luis Andrés Orive General Manager of the Environment - City Hall of Vitoria-Gasteiz

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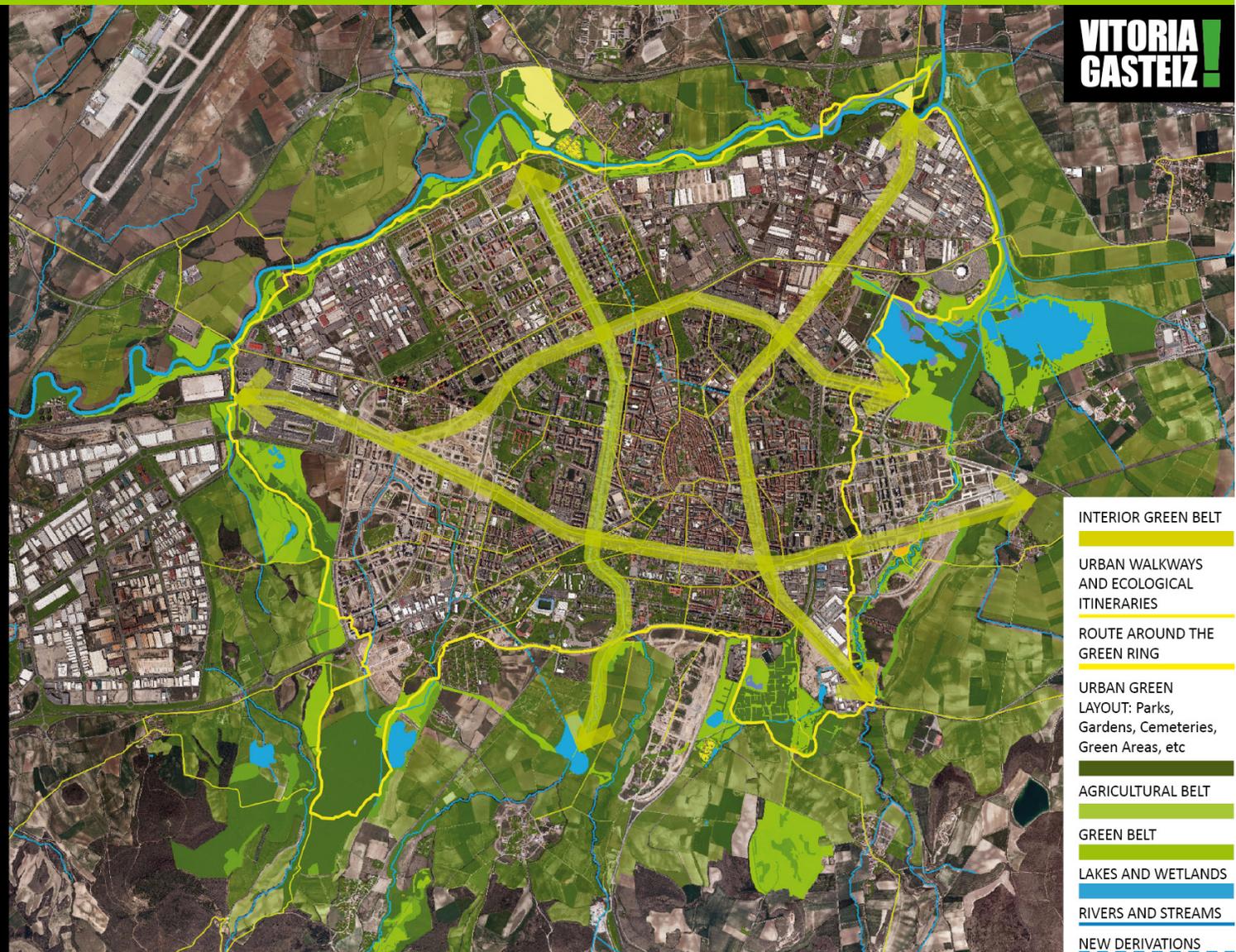
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**VITORIA
 GASTEIZ**

- INTERIOR GREEN BELT
- URBAN WALKWAYS AND ECOLOGICAL ITINERARIES
- ROUTE AROUND THE GREEN RING
- URBAN GREEN LAYOUT: Parks, Gardens, Cemeteries, Green Areas, etc
- AGRICULTURAL BELT
- GREEN BELT
- LAKES AND WETLANDS
- RIVERS AND STREAMS
- NEW DERIVATIONS

FIVE MESSAGES FOR DISCUSSION FROM VITORIA-GASTEIZ: EUROPEAN GREEN CAPITAL 2012

- 1. We have **a problem of huge dimensions** that affects humanity as a whole: Stopping the loss of biodiversity represents, therefore, a necessary challenge of colossal proportions.
- 2. We are losing control of the ecological footprint of our cities... and with the growth expected over the next 20 years, **things will get even worse**.
- 3. We must, inexcusably, take advantage of **new urban growth and renovation as opportunities to increase the biotic indices** and the general biocapacity of the urban ecosystem and of its bioregion as a whole.
- 4. Let's do it properly! ... In an **integrated manner** with other urban policies and formally, through urban and regional planning.
- 5. Success in the implementation of plans and projects to improve urban biocapacity and biodiversity will depend a great deal on our technical and scientific knowledge and on the level of political-social commitment. It is necessary, therefore, to insist upon **qualified information processes** that lead to the responsible participation of our citizens committed to the issues at stake.

1. We have a problem of colossal dimensions that affects humanity as a whole: Stopping the loss of biodiversity represents, therefore, a necessary challenge of colossal proportions.

The serious consideration of biodiversity and ecosystem services in urban and periurban environments will help without a doubt to generate resilience, contributing also to mitigation and adaptation to Climate Change.

It is also an essential strategy in the desired objective of finding a balance between the ecological footprint and biocapacity of the urban and regional system.

An adequate operation of natural cycles will bring about substantial economic savings and considerable improvements in the health and well-being of the population.

Parks in the green belt help to prevent flood hazard and consequently save a lot of money turning out overflows into life solutions



Planning for city dwellers wealth and livelihood...



2. We are losing control of the ecological footprint of our cities ... and with the growth expected over the next 20 years, things will get even worse.

The growth that cities have undergone in recent years has generated major impacts on the natural or agricultural systems invaded and especially the "metropolisation" processes.

The way in which we focus the strong, expensive urbanising processes over the coming years will be decisive in stopping the rampant loss of biodiversity, especially in periurban environments.

We must focus urban planning towards a compact and diverse city



250.000 Inhabitans

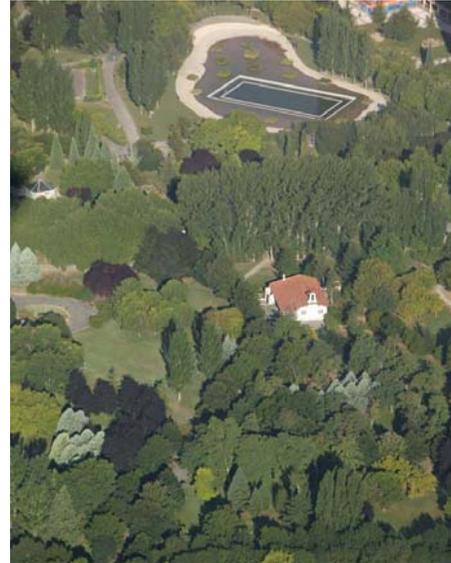
46 homes per hectare

101,51 inhabitants per hectare

**A city of proximity,
accessible by foot and by bike**



A green city coexisting with its rural and natural surroundings



600 hectares of Green Belt

100% of the population living within 300 metres to green spaces and main public services.

33 kilometres of urban pathways

11.000 hectares of forest land (1/3 of the municipality)

Large rural land with high agricultural value

4 Protected Spaces of the European Ecological Network Natura 2000 and 2 Ramsar sites

Large network of traditional pathways and non-motorised routes

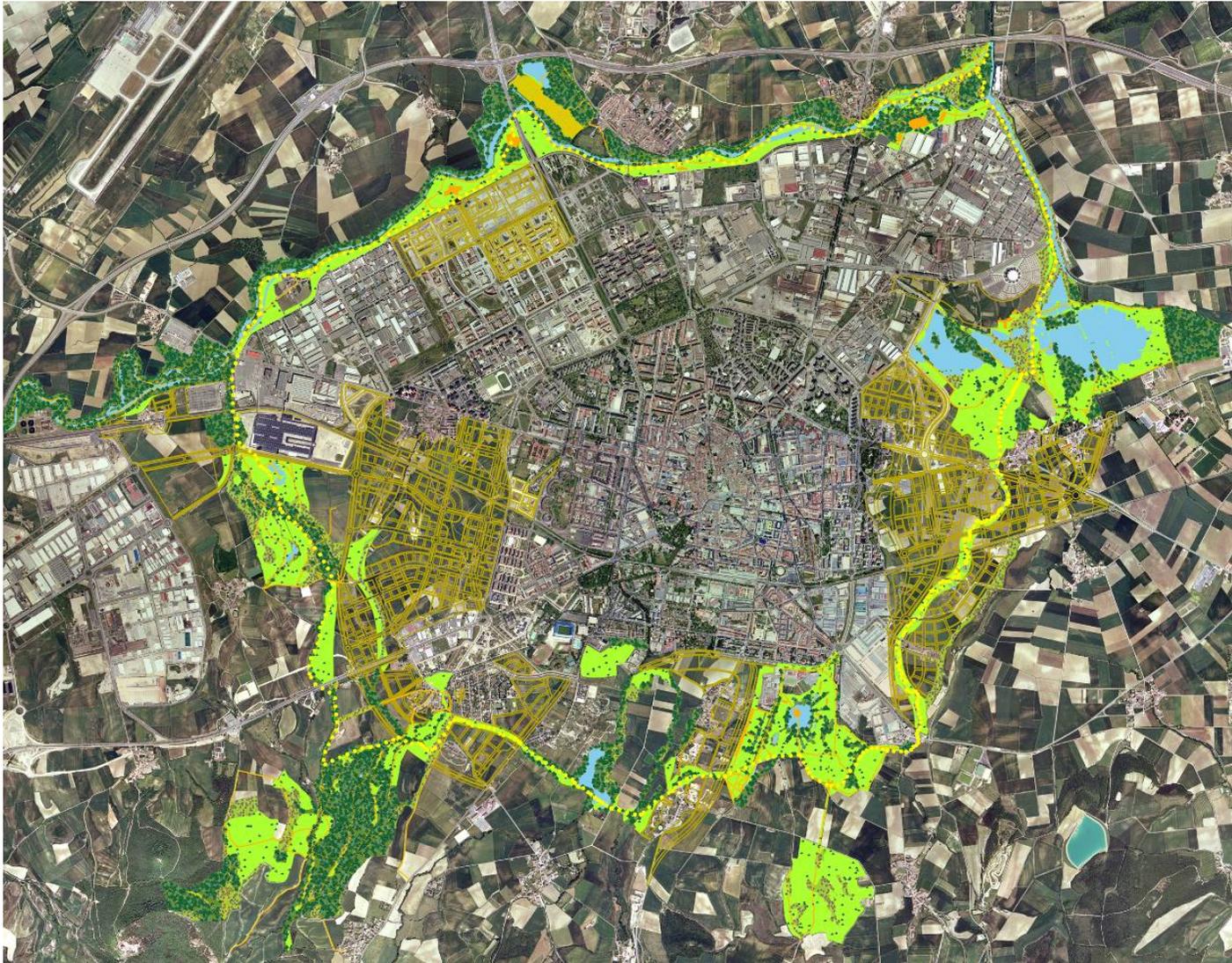


**VITORIA
GASTEIZ**



IMPLEMENTING AN URBAN MULTIFUNCTIONAL GREEN SYSTEM

The Periurban Green Belt: an holistic vision from ecological and physical planning



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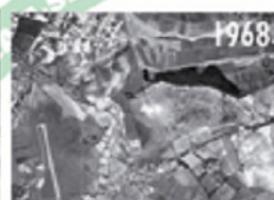
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- _ Ecosystem services
- _ Flood control

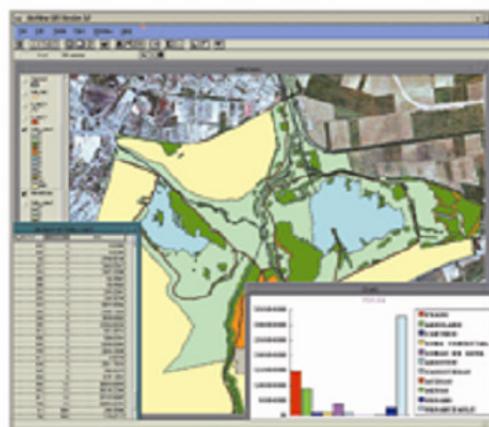
3. We must, inexcusably, take advantage of new urban growth and renovation as opportunities to increase the biotic indices and the general biocapacity of the urban ecosystem and of its bioregion as a whole.

In spite of everything, European cities contain areas with a rich biodiversity. Almost 60% of the ecosystems included in the Natura 2000 Network are represented in the urban and periurban environments of the main European cities.

We must, therefore, take advantage of the huge amount of management experience accumulated in these spaces, to promote new urban developments or refurbishments that favour biodiversity indices through specific management plans.



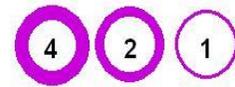
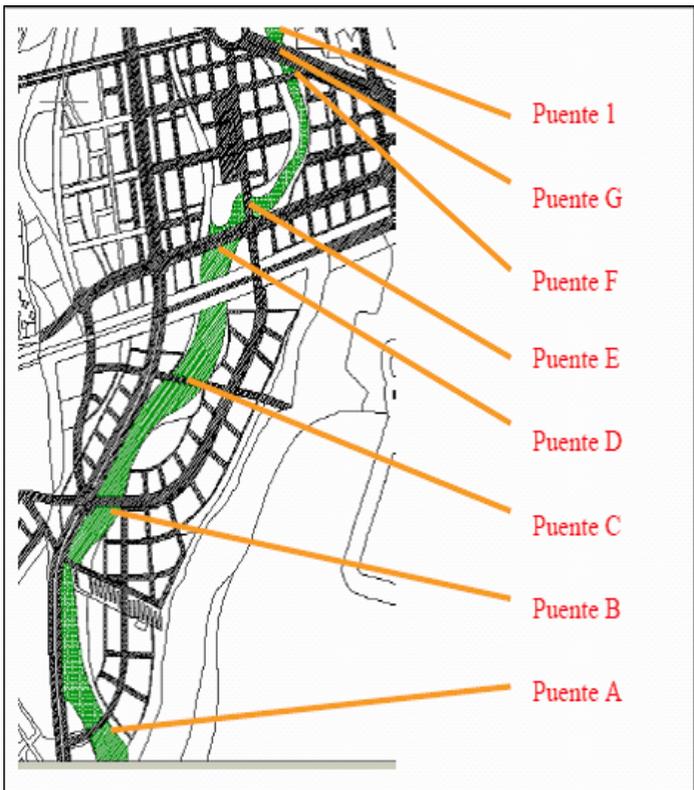
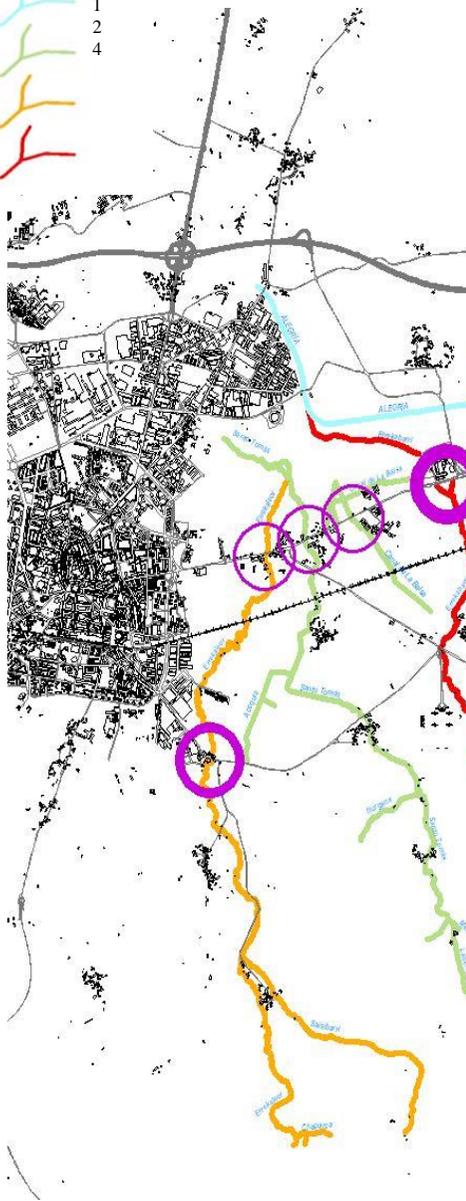
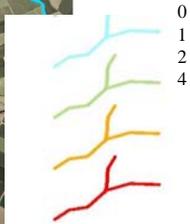
El tratamiento mediante técnicas SIG de la información recogida en el Sistema de Información Ambiental de Vitoria-Gasteiz (SIAM) permitió en este caso establecer una primera propuesta de distribución de usos.



En este análisis se consideraron los resultados de diversos estudios territoriales y ambientales que, completados con un reconocimiento histórico de la zona mediante fotografía aérea, ofrecieron una visión más completa del medio físico y biótico del área de Salburúa.



PRIMERA PROPUESTA DE DISTRIBUCIÓN DE USOS



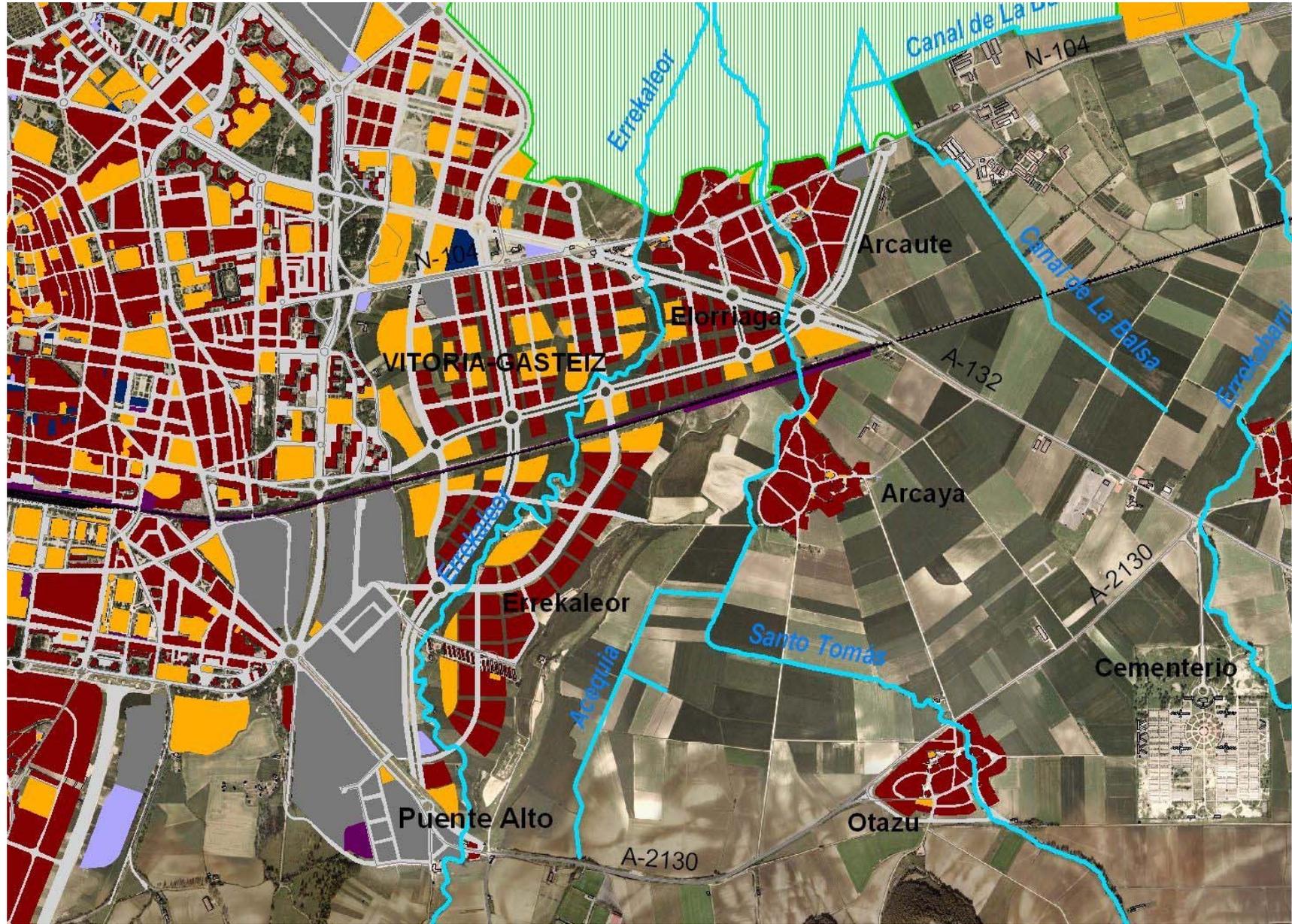


TABLE 2.8.2. BIODIVERSITY / BIOCAPACITY

	Green structure		Biological diversity	Ecological management of green areas				
	Productive ecological land Land biotic index	Accessibility Population less than 1000 m from a green or agricultural area >2 ha	Index of the decrease in the number of taxa of threatened flora and fauna (see table 2.8.1)	Vegetation Proportion of bushes and trees coverage in green areas	Water		Waste Recovery of waste from green areas such as compost	CO2 Capture Increase in the contribution of green areas to CO2 fixing
					Consumption of water per unit of surface area	Use of recycled or non-drinking water		
2000	100	-	100	100	100	-	-	100
ESCT 2020	-	-	< 100	≈ 100	> 100	< 10%	< 20%	< 105
ESCE 2020	-	-	≈ 100	100-110	> 90	10-20%	> 10%	< 110
ESCD 2020	> 140	> 30%	> 110	> 120	< 50	> 50%	> 80%	> 110
ESCT 2050	.	.	< 100	≈ 100	> 100	< 20%	< 20%	< 110
ESCE 2050	-	-	≈ 100	110-120	> 80	10-50%	> 20%	< 120
ESCD 2050	> 150	> 50%	> 125	> 140	< 20	100%	100%	> 125

ESCT: Trend scenario; ESCE: Expected scenario; ESCD: Desirable scenario

The "desirable scenario for the urban green", taking the year 2000 as reference, proposes for 2020 the need to substantially reduce water expenditure (less than 50%) and the generation of green waste (to 20%), and at the same time increase the carbon dioxide capture capacity by more than 10%.

With a "cyclical vision" (until 2050), these percentages would be increased until it is possible to save 80% irrigation water, increase carbon dioxide fixing by more than 25% and achieve full use of green waste, promoting the creation of parks of substantial size that will allow a greater biological wealth and contribute to reducing by 25% the taxa of threatened flora and fauna within the municipality.

4. Let's do it properly!

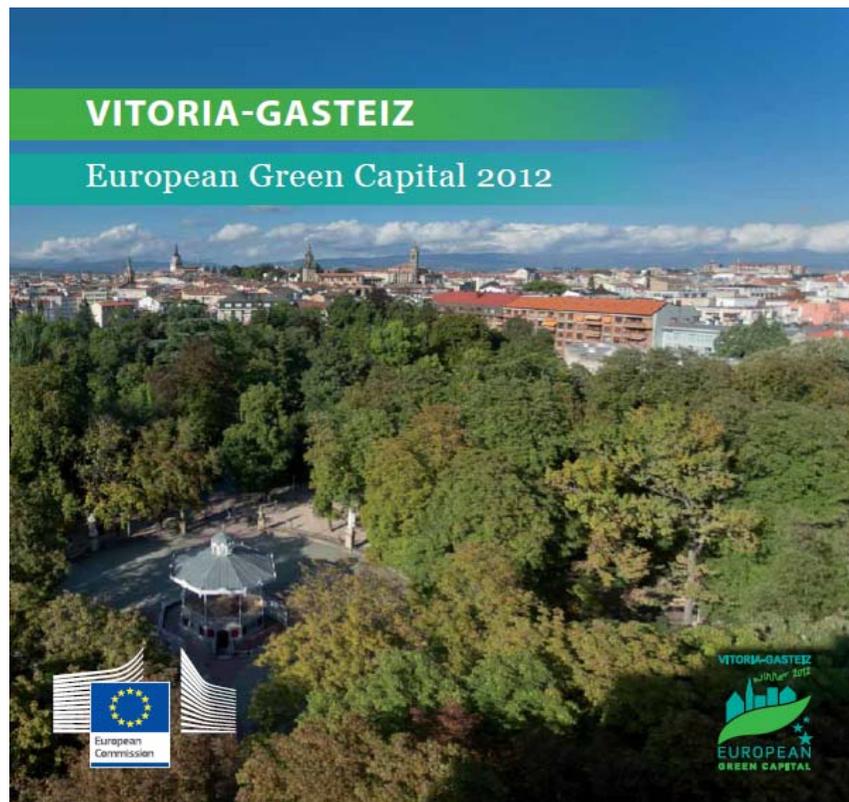
...In an integrated manner- with other urban policies and formally, through urban and regional planning.

The way in which urban biodiversity and biocapacity are dealt with cannot be done separately from other urban policies. These must, therefore, be formulated explicitly in the strategic plans of the city, such as Agenda 21, etc., in line with its hydraulic, power, waste, mobility management policies, etc.

This comprehensive vision is the one that sustains the European Green City Award. In particular, strategies for improving Urban Biocapacity and Biodiversity must be integrated in a "natural" manner in urban and regional planning.



- Climate change
- Local transport
- Green urban areas incorporating sustainable land use
- Nature and biodiversity
- Quality of local ambient air
- Quality of the Acoustic Environment
- Waste production and management
- Water consumption
- Waste water treatment
- Eco innovation and sustainable employment
- Environmental management of the local authority
- Energy performance



USEFUL TOOLS

- . **Local biodiversity Strategy and Action Plans**
- . **Cities Biodiversity Index**
- . **TEEB for cities**
- . **URBIS – Urban Biosphere Initiative**
- . **Local Action for Biodiversity. ICLEI**
- . **Cities and Biodiversity Hotspot Initiative**
- . **URBES Project:Urban Biodiversity and Ecosystem Services**
- . **CBD Aichi Targets...**

VITORIA-GASTEIZ: FROM GREEN BELT TO URBAN GREEN INFRASTRUCTURE AND REGIONAL ECOLOGICAL SYSTEM

Reinforcing ecological and public connectivity through networking

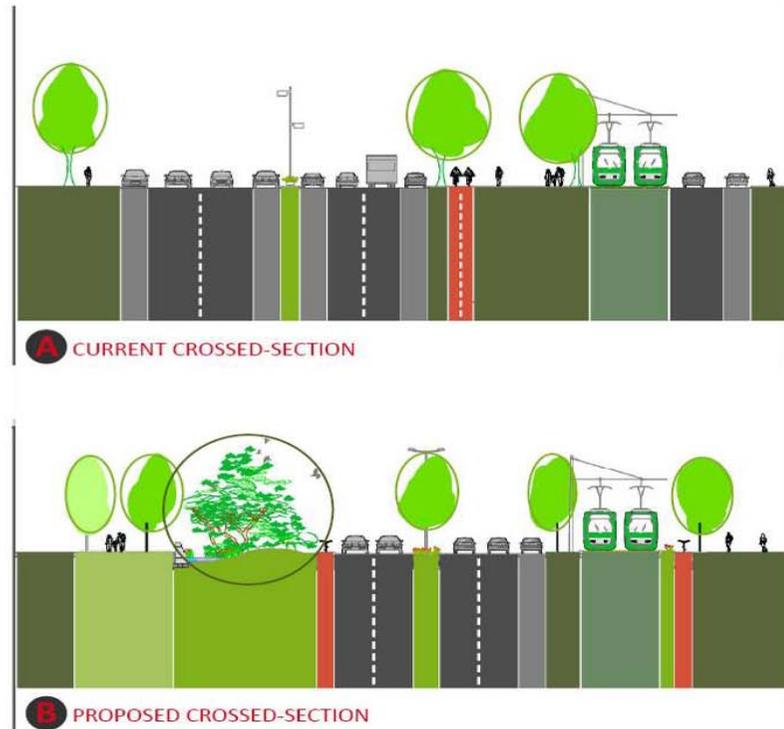


Bringing nature in to the City: The Interior Green Belt... Promoting new ecosystem services in the interior city



VITORIA-GASTEIZ: FROM GREEN BELT TO URBAN GREEN INFRASTRUCTURE AND REGIONAL ECOLOGICAL SYSTEM

Turning out flooding problems into life solutions



FIRST PILOT AXIS OF IMPLEMENTATION GASTEIZ AVENUE - RIVER BATAN



VITORIA-GASTEIZ: FROM GREEN BELT TO URBAN GREEN INFRASTRUCTURE AND REGIONAL ECOLOGICAL SYSTEM

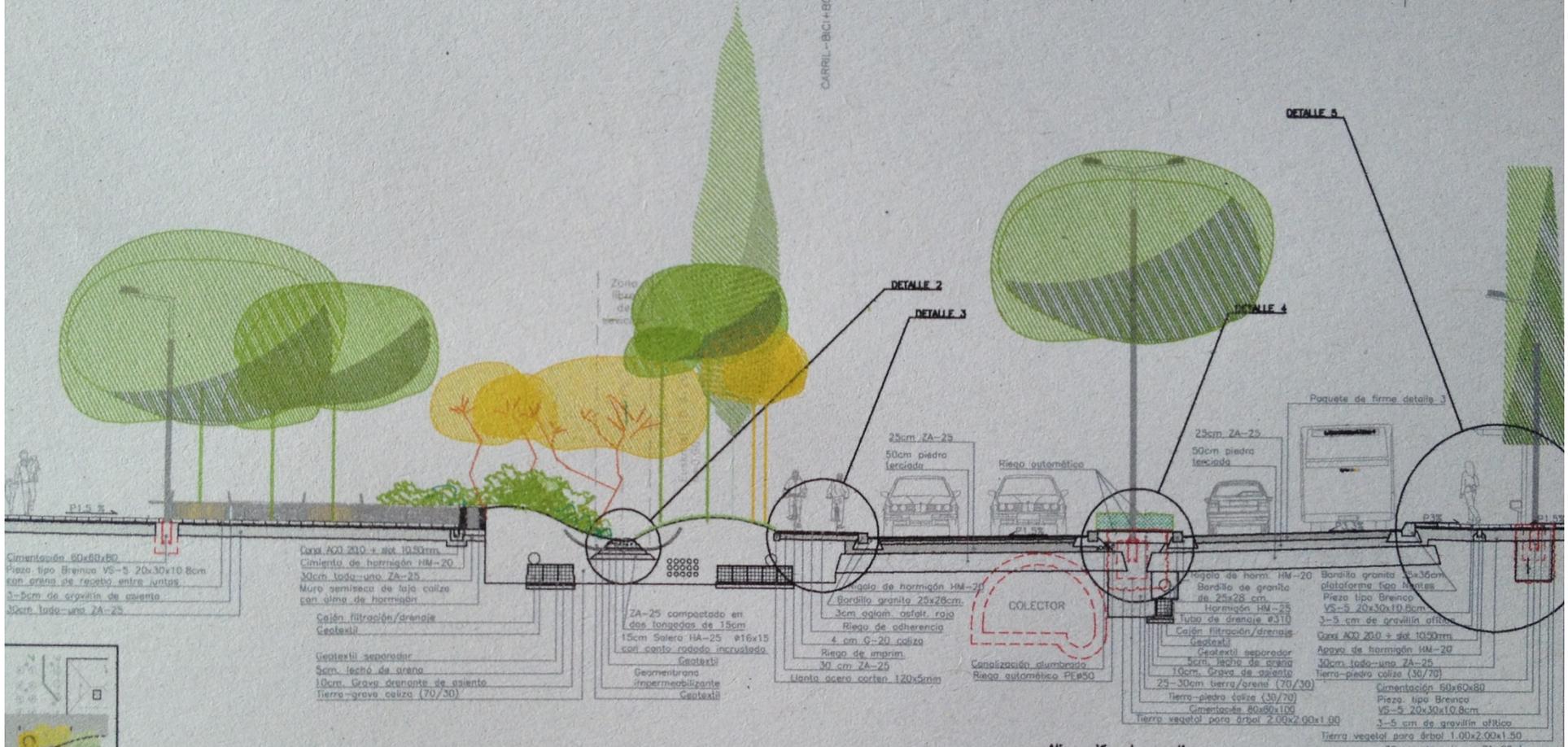
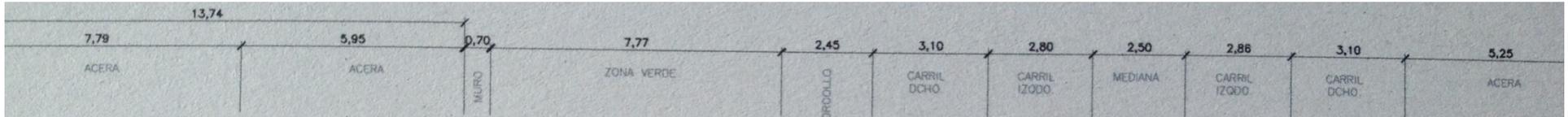
Turning out flooding problems into life solutions



3. VITORIA-GASTEIZ: FROM GREEN BELT TO URBAN GREEN INFRASTRUCTURE AND REGIONAL ECOLOGICAL SYSTEM

Turning out flooding problems into life solutions





Cimentación 80x60x80
Piezo tipo Brenco VS-5 20x30x10.8cm con grana de respo entre juntas
3-5cm de gravilla afilada
3cm todo-uno ZA-25

Cana ACO 200 + slot 10.50mm
Cemento de hormigón HM-20
30cm todo-uno ZA-25
Muro semiseco de faja coliza con alme de hormigón

Caja filtración/drenaje
Geotextil
Geotextil separador
3cm lecho de arena
10cm Grava de asiento de asiento
Tierra-grava coliza (70/30)

ZA-25 compactado en dos tongadas de 15cm
15cm Salero HA-25 ø16x15 con canto rodado incrustado
Geotextil
Geomembrana impermeabilizante
Geotextil

Placa de hormigón HM-20
Bordillo granito 25x28cm
3cm goma asfalt rojo
Riego de adherencia
4 cm G-20 coliza
Riego de imprim
30 cm ZA-25
Llanta acero corten 120x5mm

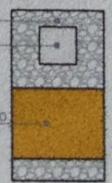
COLECTOR
Canalización aluminada
Riego automático PE90

Bordillo de horm. HM-20
Bordillo de granito de 25x28 cm
Hormigón HM-25
Tubo de drenaje ø310
Caja filtración/drenaje
Geotextil
Geotextil separador
3cm lecho de arena
10cm Grava de asiento
25-30cm tierra/arena (70/30)

Bordillo granito 25x28cm
plataforma fpa hentes
Piezo tipo Brenco VS-5 20x30x10.8cm
3-5 cm de gravilla afilada
Cana ACO 200 + slot 10.50mm
Apoyo de hormigón HM-20
30cm todo-uno ZA-25
10cm Grava de asiento
Tierra-piedra coliza (30/70)
Cimentación 60x60x80
Piezo tipo Brenco VS-5 20x30x10.8cm
3-5 cm de gravilla afilada
Tierra vegetal para árbol 1.00x2.00x1.50
30 cm de zahorra ZA-25

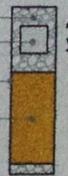
Alineación de mediana

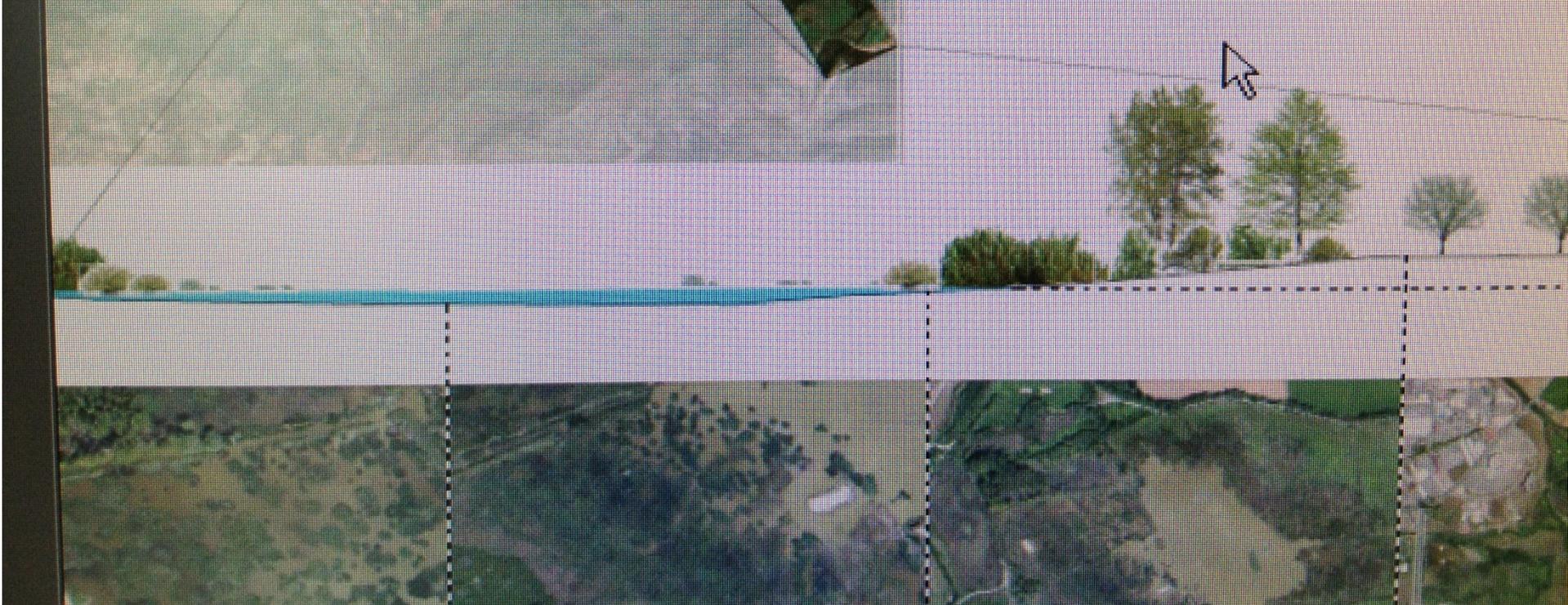
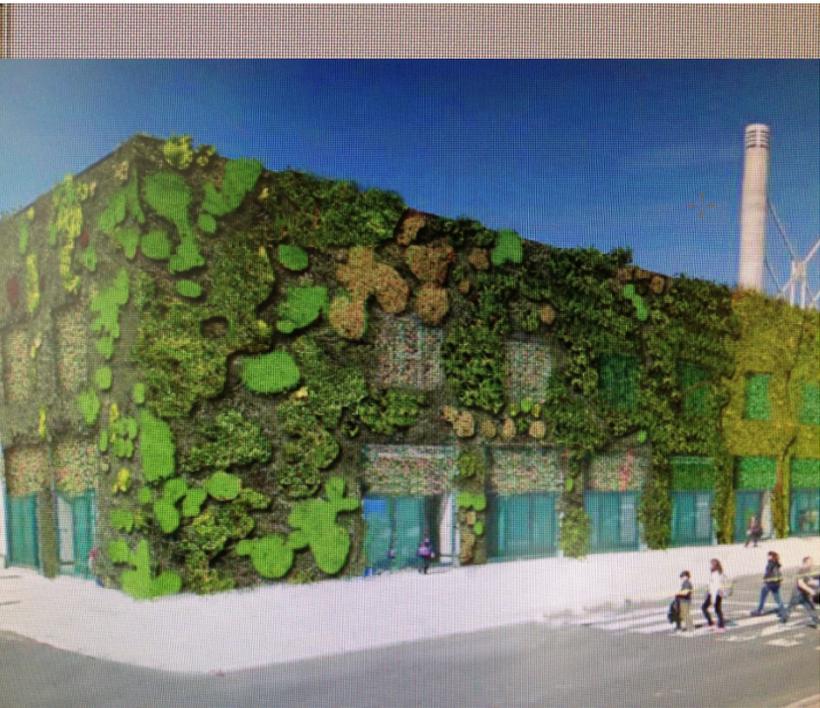
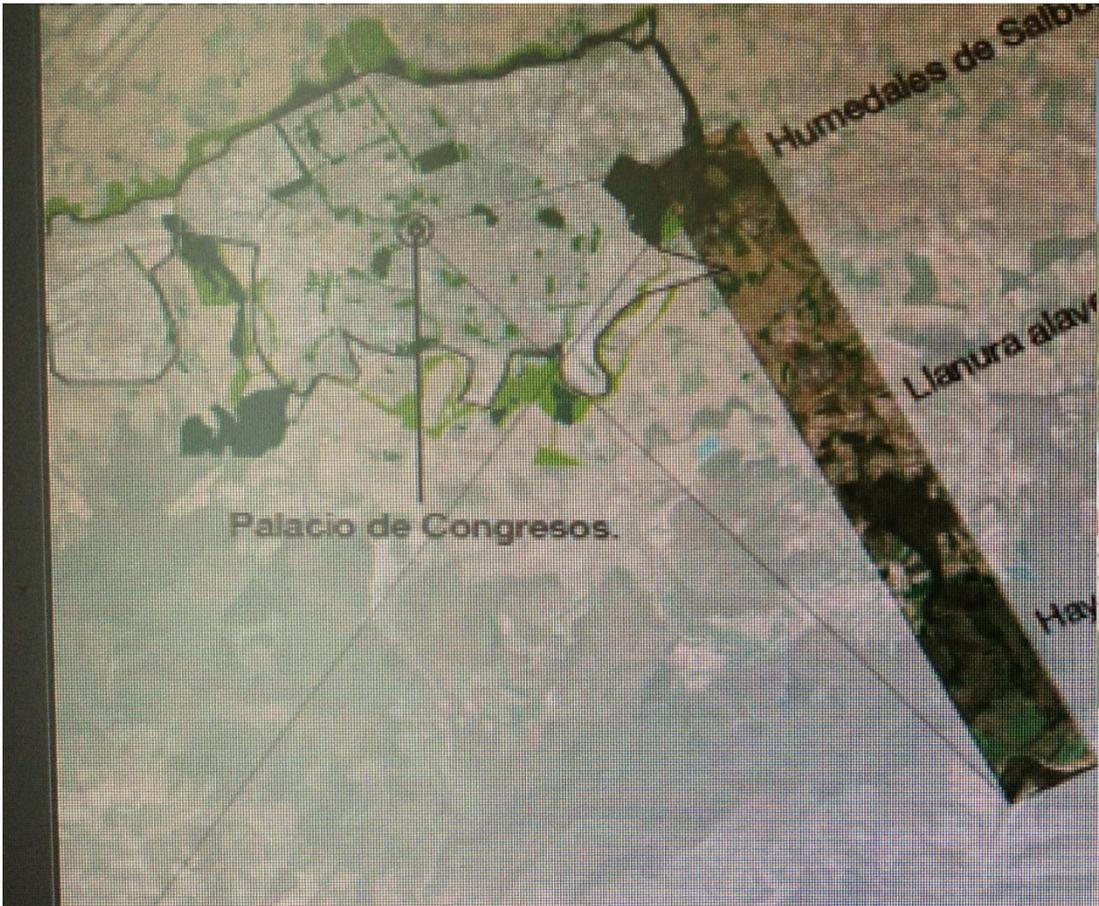
Franja continua de tierra-grava (30/70) de 1.80-2.00 de ancho
Cimentación luminaria 80x80x1.00
Tierra vegetal para árbol 2.00x1.50x1.50



FASE DE PROYECTO

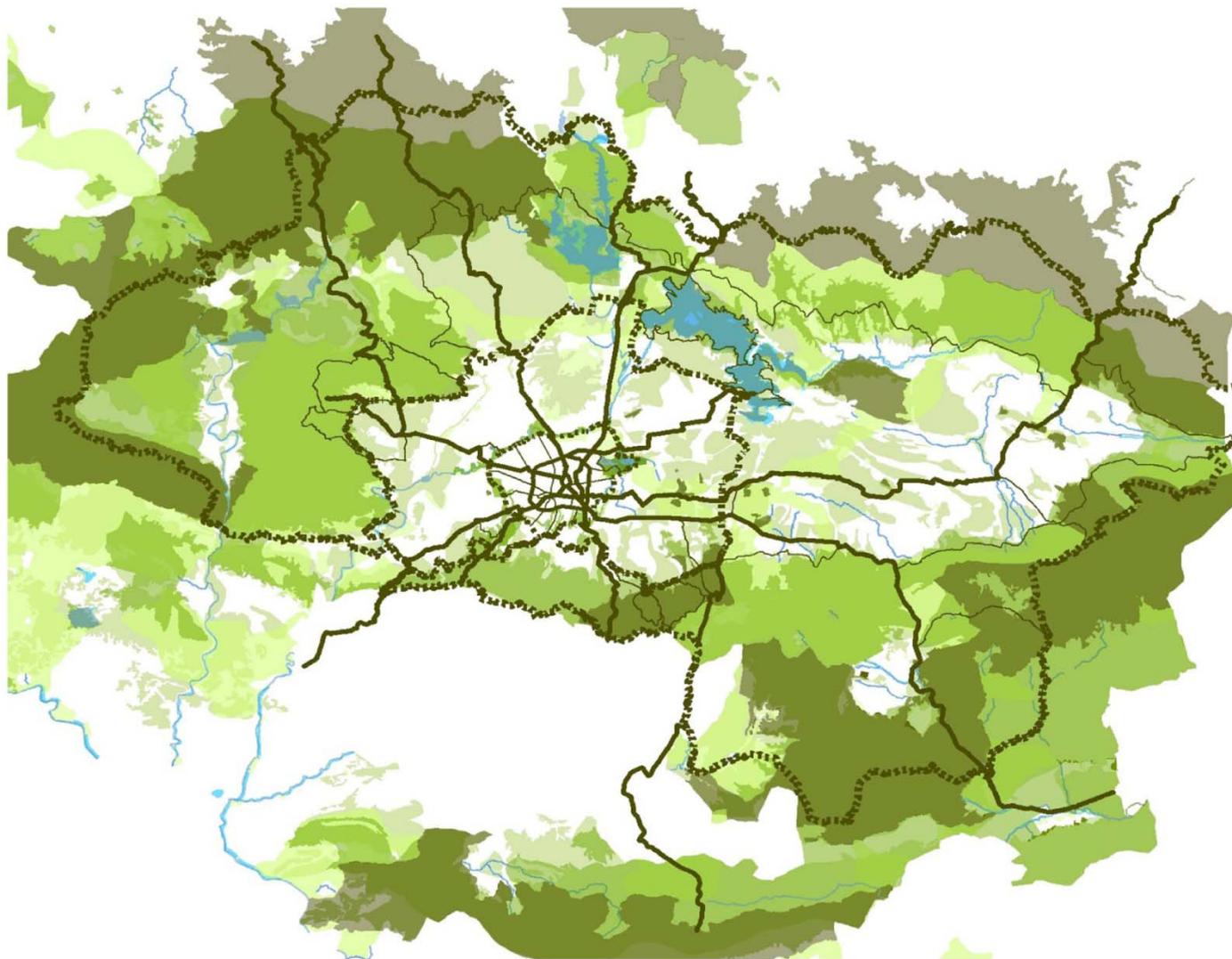
Franja continua de tierra-piedra (30/70) de 1.00-1.20 de ancho
Cimentación luminaria 60x60x80
Alcorque de 1.00x2.00m de chopa corten de 10x100mm
Tierra vegetal para árbol 1.00x2.00x1.50





VITORIA-GASTEIZ: FROM GREEN BELT TO URBAN GREEN INFRASTRUCTURE AND REGIONAL ECOLOGICAL SYSTEM

Restoring the ecological main functions, recovering cultural heritage and developing a Green Network of ancient routes :



PROTECTED NATURAL AREAS NETWORK
Natural Parks
Protected Biotopes
Singular Trees

EUROPEAN ECOLOGICAL NETWORK / NATURA 2000
LICs
ZEPAs

RAMSAR WETLANDS

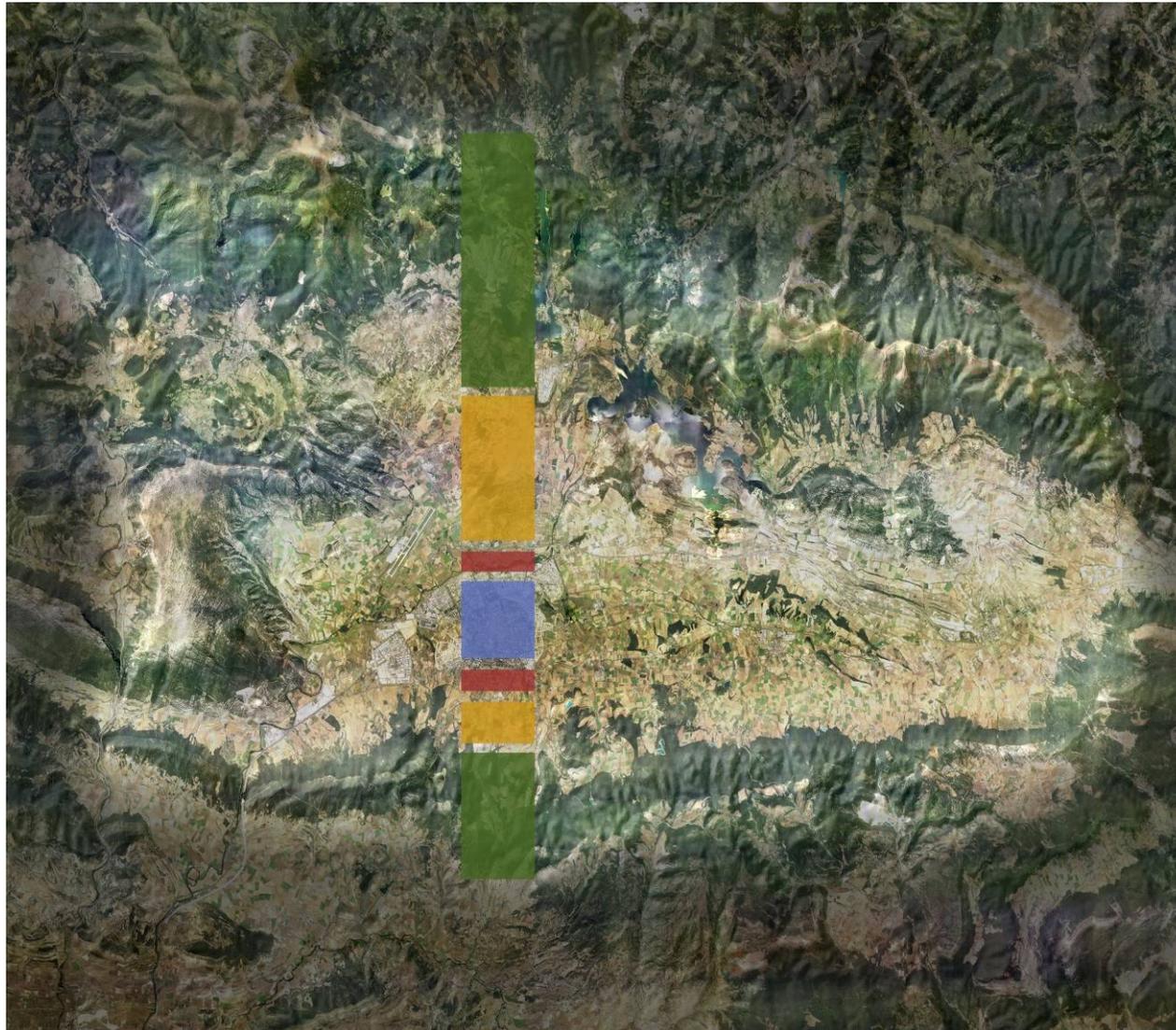
SINGULAR AND OUTSTANDING LANDSCAPES IN ALAVA

ECOLOGICAL CORRIDORS NETWORK OF ALAVA

REGIONAL PROTECTED AREAS (PTP AC)

GREEN ITINERARIES
Urban Pathways
Walks along the Green Belt
Green Routes
PRs y GRs
Sheperd´s Route
Greenways

The Biosphere Reserve of Vitoria-Gasteiz and its hinterlands?



Ecological functional network



Transitional rural matrix



Buffer green ring

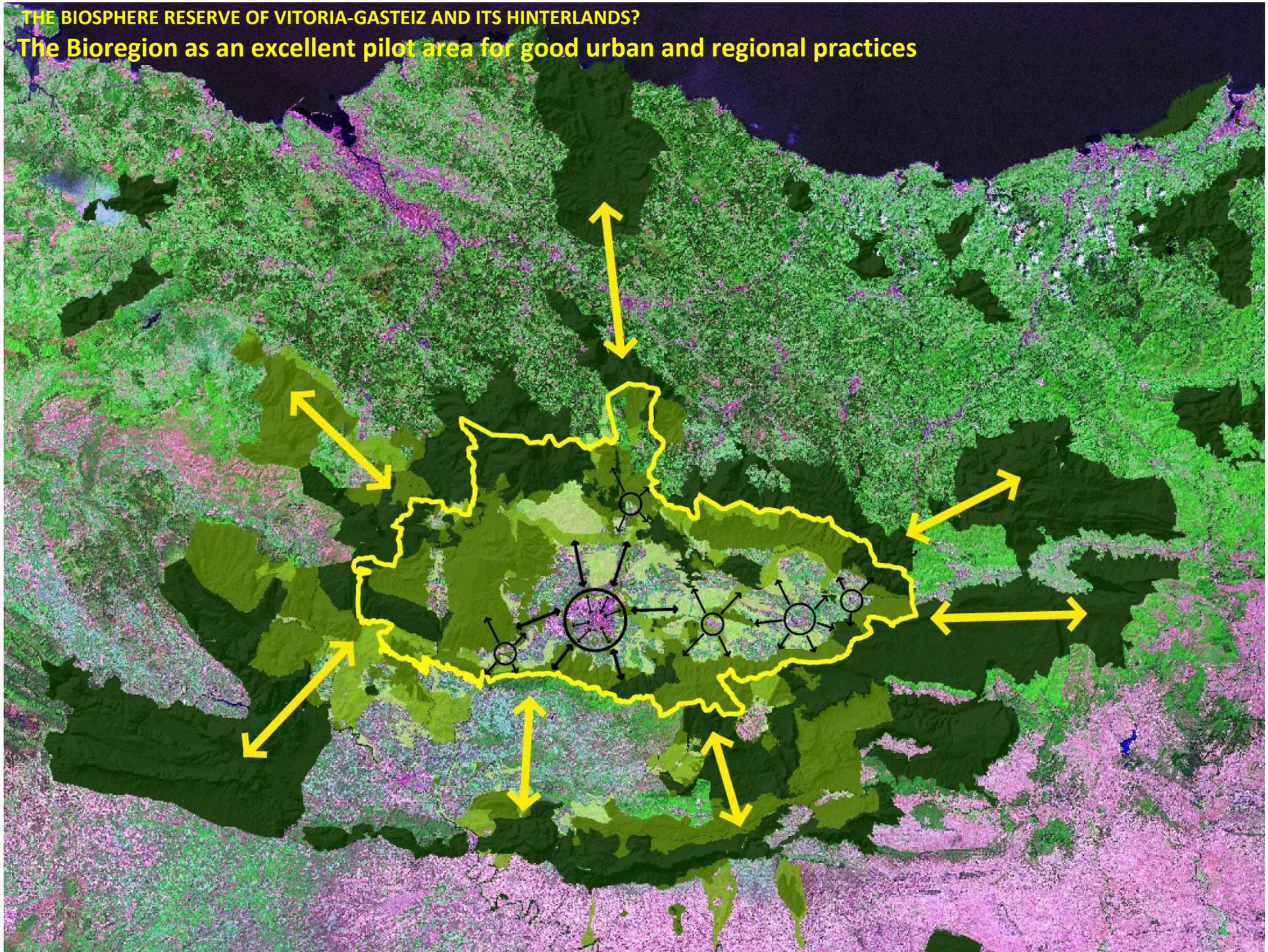


Urban core



THE BIOSPHERE RESERVE OF VITORIA-GASTEIZ AND ITS HINTERLANDS?

The Bioregion as an excellent pilot area for good urban and regional practices



5. Success in the implementation of plans and projects to improve urban biocapacity and biodiversity will depend a great deal on our technical and scientific knowledge and on the level of political-social commitment.

It is necessary, therefore, to insist on qualified information processes that lead to the responsible participation of our citizens committed to the issues at stake.

Unfortunately, the value of natural capital is not often appreciated by urban dwellers.

Successful implementation and management of Biodiversity and Ecosystem Services Strategies must be based on:

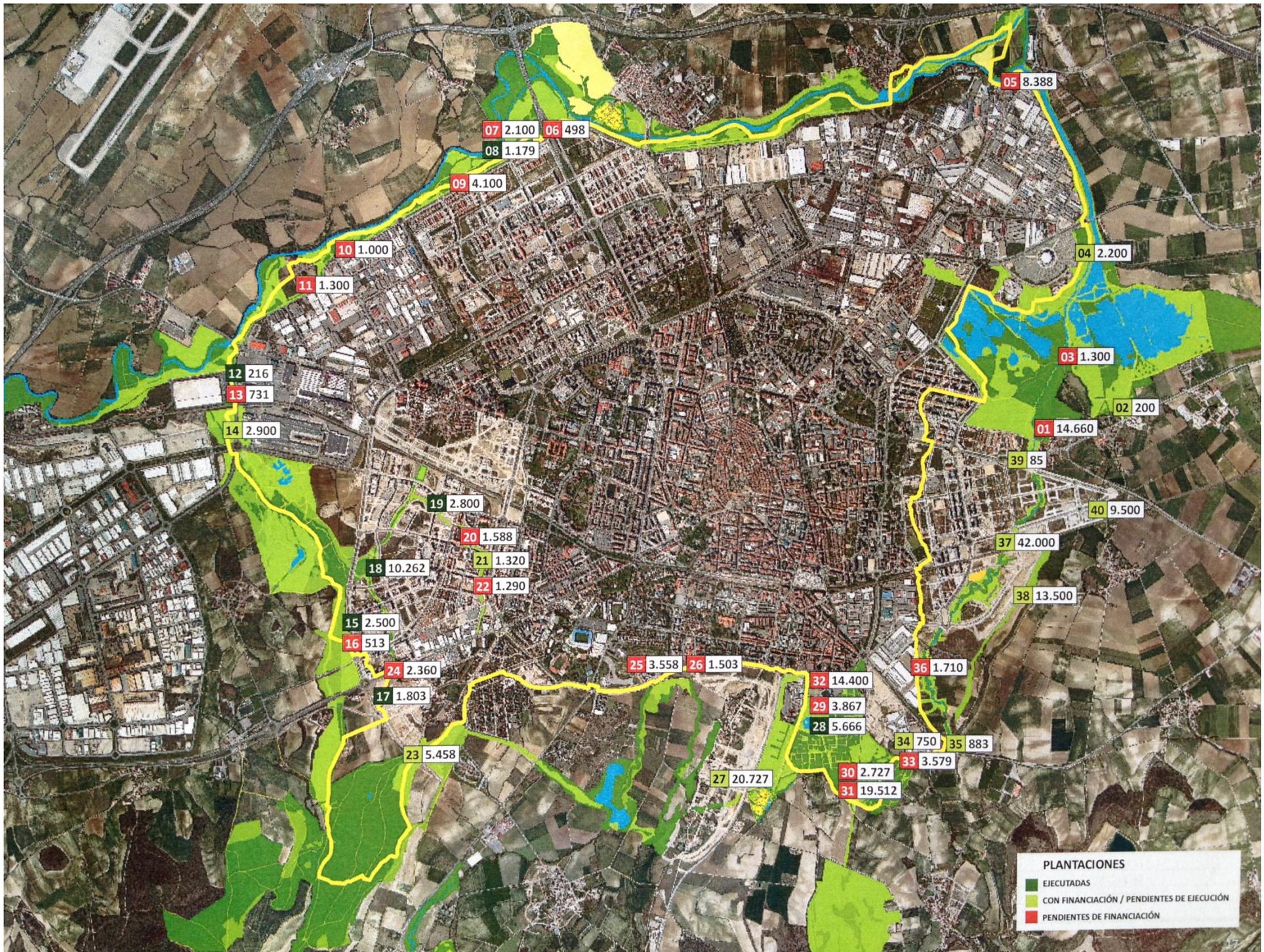
- Public awareness and participation
- Technical and scientific knowledge
- Social and Political Commitment (Multistakeholders involvement at planning and project levels)

Cities and outlying areas offer unique opportunities for education and learning:

We must establish priorities in the initial development stages of our strategies for those projects that have a greater ecological undertaking and pedagogic force.

How to do that? Developing ecological awareness...







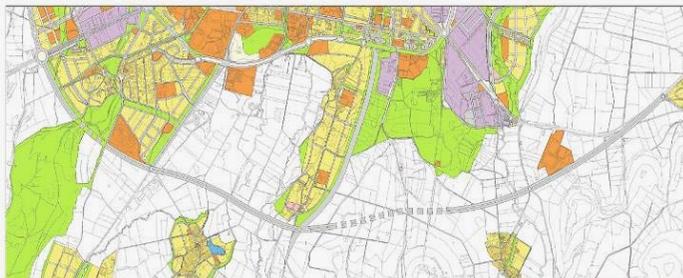
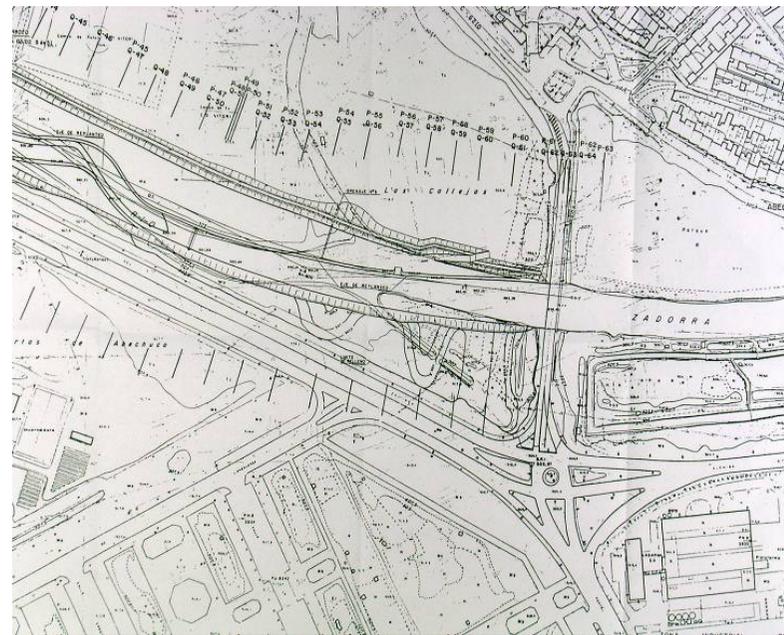
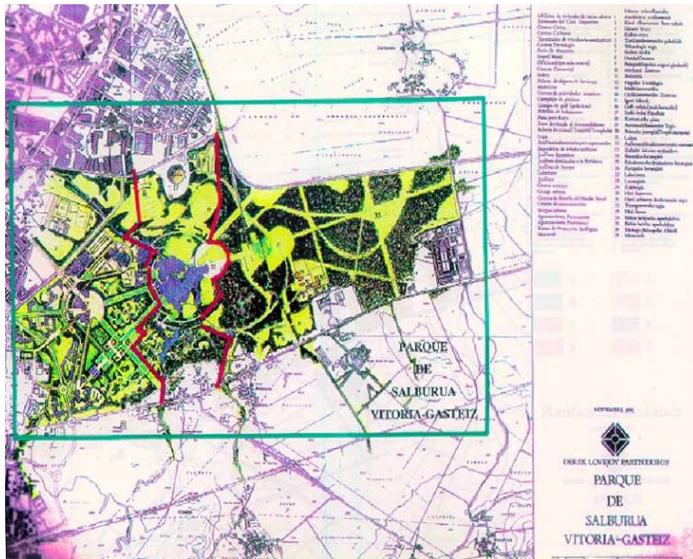
250.000 ÁRBOLES PARA COSER EL ANILLO VERDE

La Green Capital unirá sus parques periurbanos con una plantación masiva impulsada por las empresas y abierta a todos los ciudadanos

How to do that? Reclaiming derelict lands...

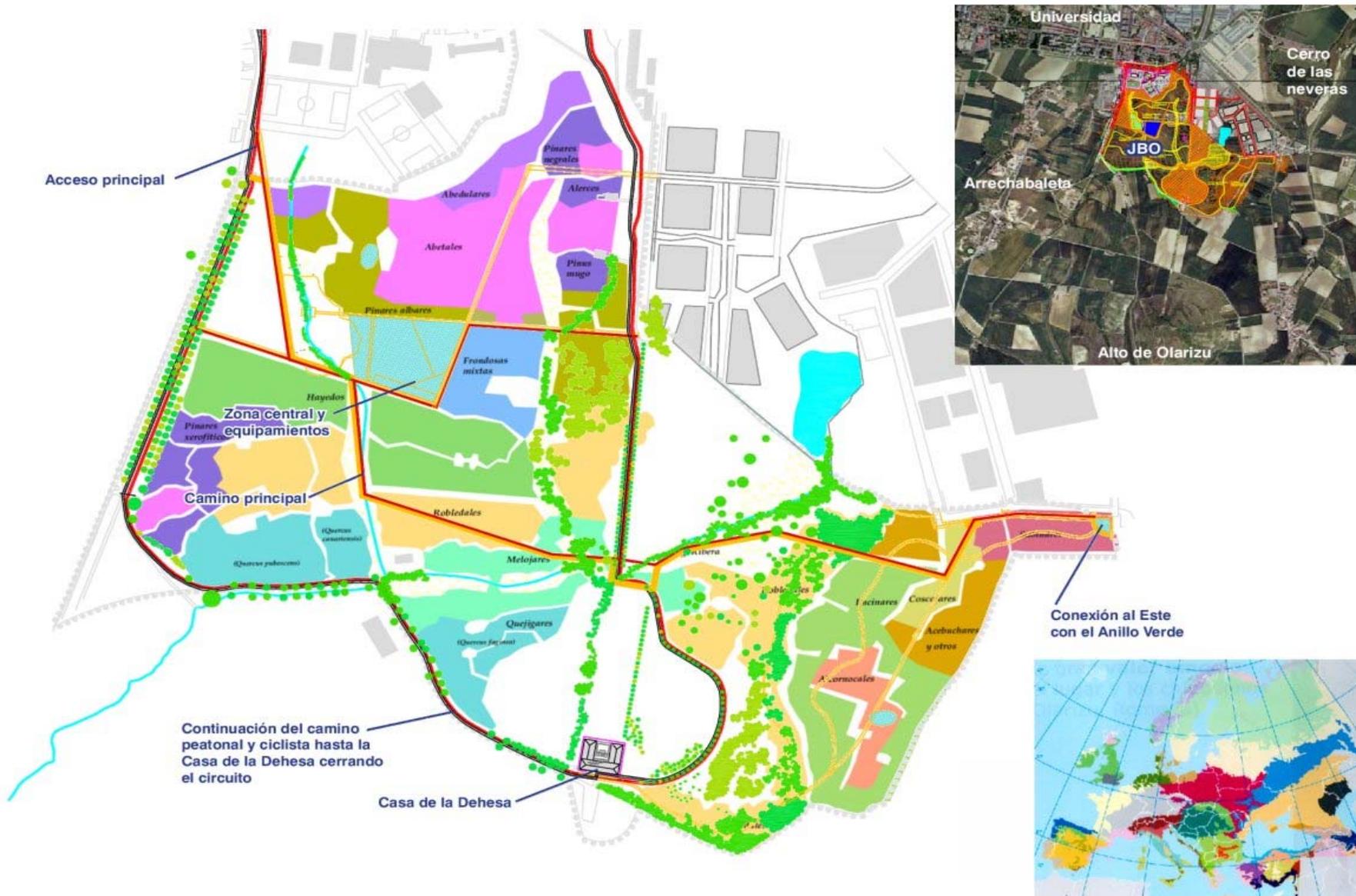


How to do that? Stopping unsustainable projects...

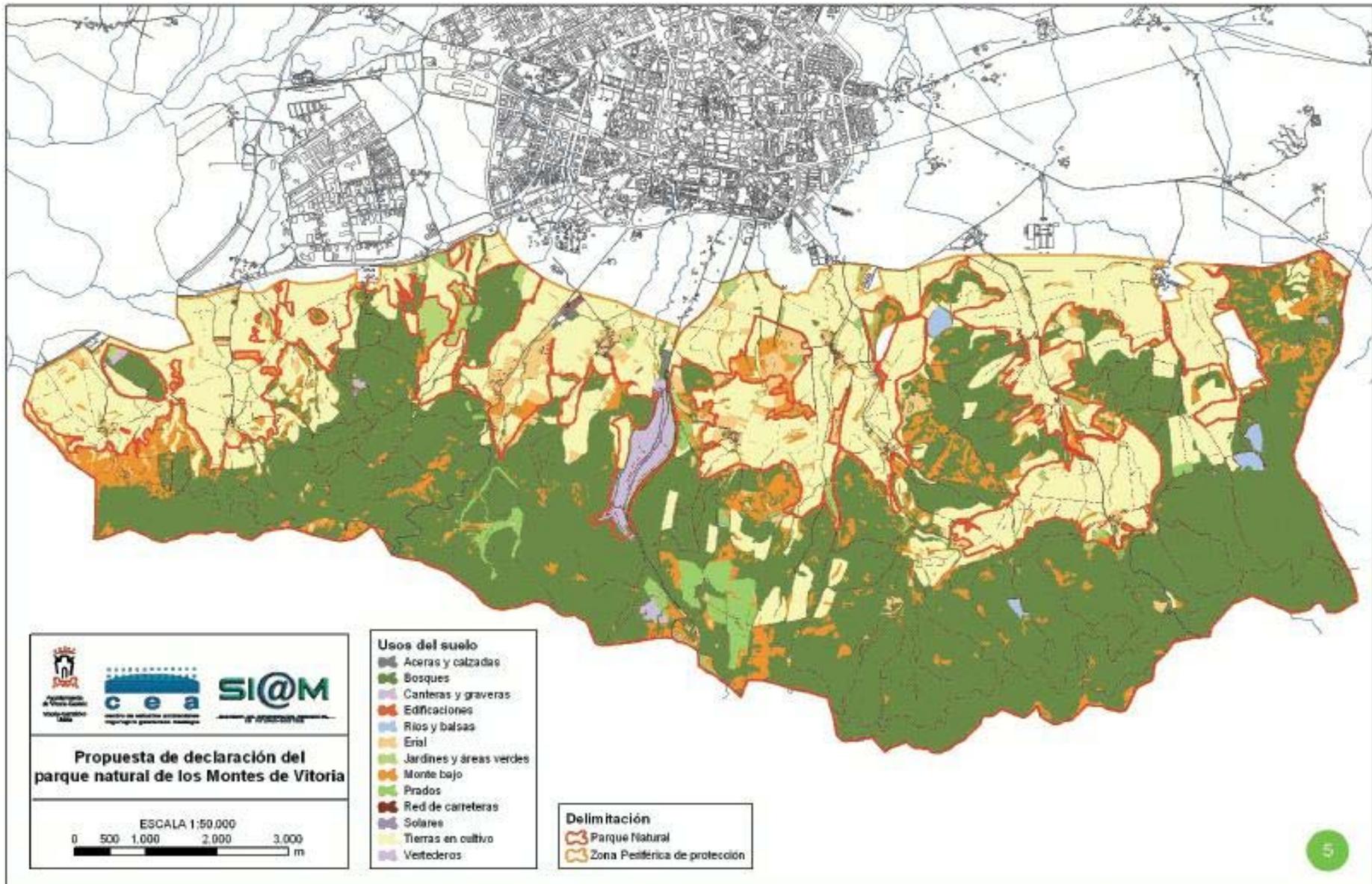




How to do that? Increasing biodiversity through specific conservation plans of endangered species: The Olarizu Botanical Garden



How to do that? Consolidating the Natural Park of the Vitoria Mountain Range as the real heart of the Green Belt



How to do that? Integrating functional landscapes







2011	Zabalzana	Armentia	Olárizu	Salburua	Zadorra	TOTAL ANILLO	
JULIO	8.591	20.947	38.927	50.220	43.179	161.864	
AGOSTO	8.237	16.651	23.427	31.531	35.827	115.674	
SEPTIEMBRE	8.591	17.094	36.757	49.689	36.270	148.401	
OCTUBRE	4.198	9.149	21.700	27.333	22.931	85.312	
NOVIEMBRE	4.925	10.124	23.507	27.953	23.082	89.590	
DICIEMBRE	5.651	9.335	27.147	25.004	15.801	82.938	
ENERO	10.354	11.399	26.731	41.124	24.844	114.452	
FEBRERO	4.685	16.306	25.092	28.600	25.491	100.174	
MARZO	6.377	12.329	24.295	32.966	33.338	109.306	
ABRIL	10.274	16.873	37.820	44.950	43.223	153.140	
MAYO	14.304	18.246	25.509	63.063	44.640	165.761	
JUNIO	6.997	17.227	29.361	36.846	36.580	127.011	
TOTAL PARQUE	93.186	175.681	340.274	459.278	385.206	1.453.625	



