

CRANA NAVARRAN ENVIRONMENTAL RESOURCES CENTRE

Conférence finale du projet
PRO.MOTION

Maribel Gómez. Architect.
PRO.MOTION project manager

CRANA

Navarran Environmental Resources Centre:

- We are a **non-profit foundation** established on the initiative of the Government of Navarre.
- We **work alongside** the Government and social organizations to **supply Navarran society with knowledge on the environment** as means of leading it to take joint responsibility for its conservation and improvement
- For more information, please link to: www.crana.org

REDUCING CAR USE IN SARRIGUREN AND DRIVING PLANNING TO SUST. MOBILITY

The experience in Navarre (Spain)
implementing project
PRO.MOTION

Navarran Environmental Resources Centre – CRANA
Maribel Gómez. Architect

PROMOTION project implementation in Navarre has covered:

- Promoting solutions to overcome existing barriers to reduce car use in Sarriguren residential area
- Providing guidelines to urban planners to direct future plans to sustainable mobility in Navarre

PROMOTING SOLUTION TO REDUCE CAR DEPENDENCY IN SARRIGUREN



BARRIERS to overcome:

- Location
- Mobility model in the metropolitan area of Pamplona
- Urban planning and design
- Residential area non finalization (lack of facilities)
- Population (families with high mobility needs)
- Current mobility services

SARRIGUREN residential area: LOCATION



SARRIGUREN residential area: LOCATION

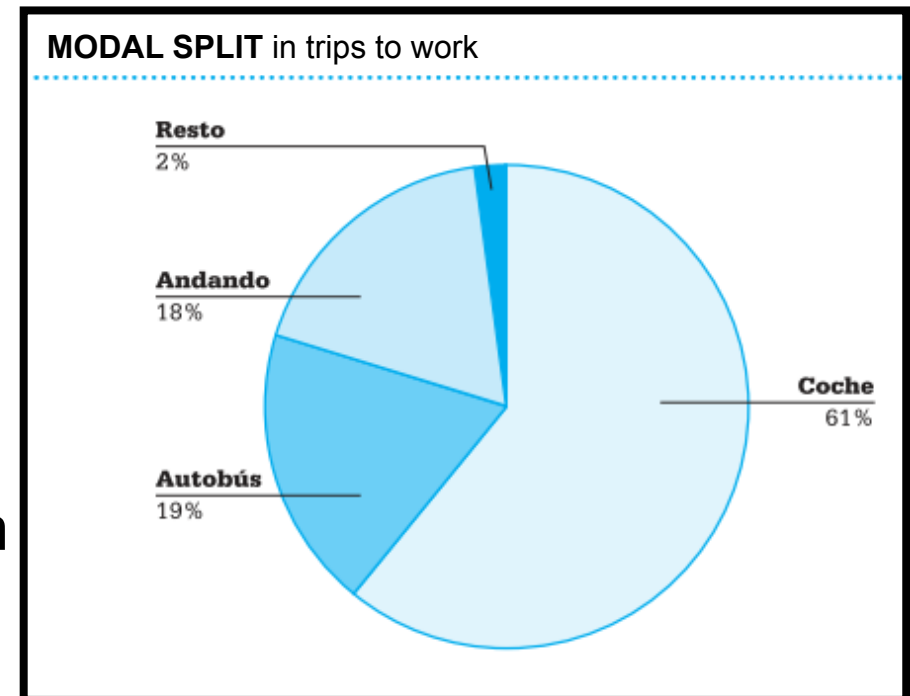


SARRIGUREN residential area: LOCATION



MOBILITY MODEL in metropolitan area of Pamplona

- Population about 300.000 inhabitants
- Has experienced a sprawl phenomenon
- New mono-functional areas has been created
- Motorized mobility has been increasing



URBAN PLANNING and DESIGN in Sarriguren:

- Planning process started in 1998
- Developed by the Government of Navarre to respond to a high demand of public housing



URBAN PLANNING and DESIGN in Sarriguren:

- 5.372 housing units planned (98% public).
- Facilities: health centre, sports centre, schools
- Employments: plots reserved for companies



URBAN PLANNING and DESIGN in Sarriguren:

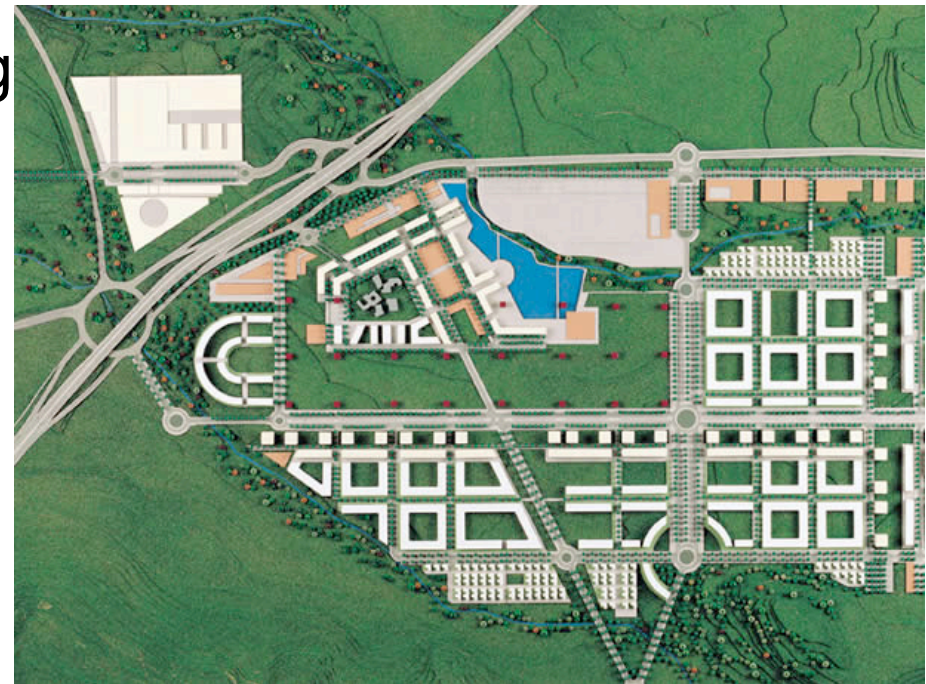
- Innovative environmental aspects were considered (energy efficiency and renewable energy integration, water treatment and quality of urbanization)



URBAN PLANNING and DESIGN in Sarriguren:

- Mobility was not sufficiently considered
- 2 parking plots per housing unit
- Roads designs
- Facilities locations

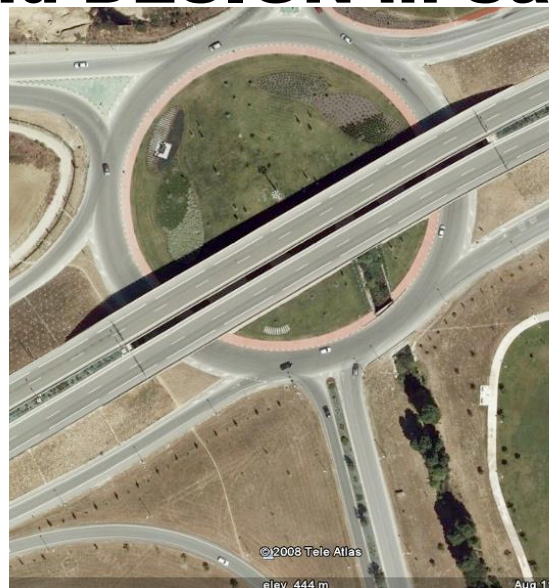
Sarriguren was recognized with the European Urban Planning Award in 2009



URBAN PLANNING and DESIGN in Sarriguren:

- **CONDITIONING
EXTERNAL MOBILITY**

- Ring road as a physical barrier
- Roundabout to connect to road network



URBAN PLANNING and DESIGN in Sarriguren:

- **CONDITIONING INTERNAL MOBILITY**
 - Traditional roads designs
 - Cars high speed
 - Car spaces over dimensioned

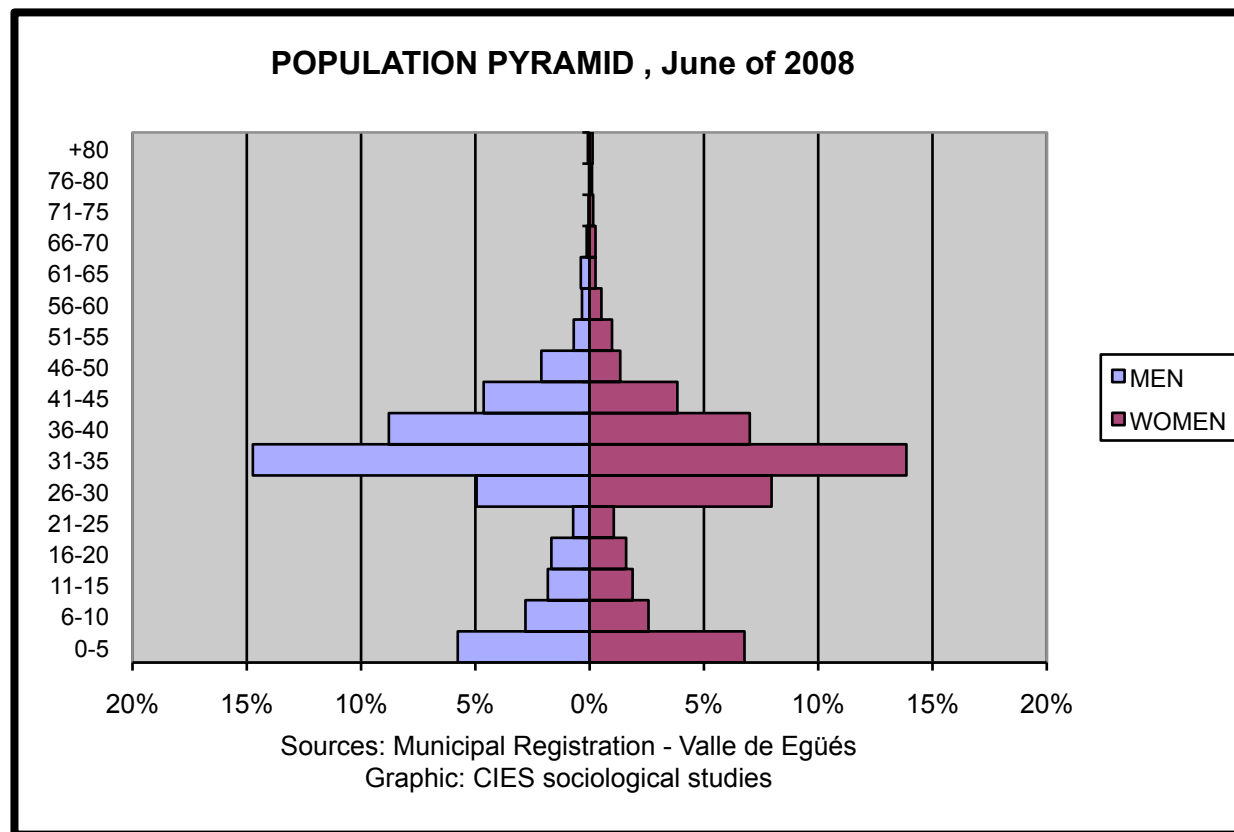


LACK OF FACILITIES and area IN GROWTH :

- 3.023 inhabitants in October of 2008
- 9.984 inhabitants in October of 2010
- Sports centre, PT service in October of 2008
- 2 Schools opened in September of 2009
- Entrance to this facilities are designed for car accessibility



POPULATION characteristics:

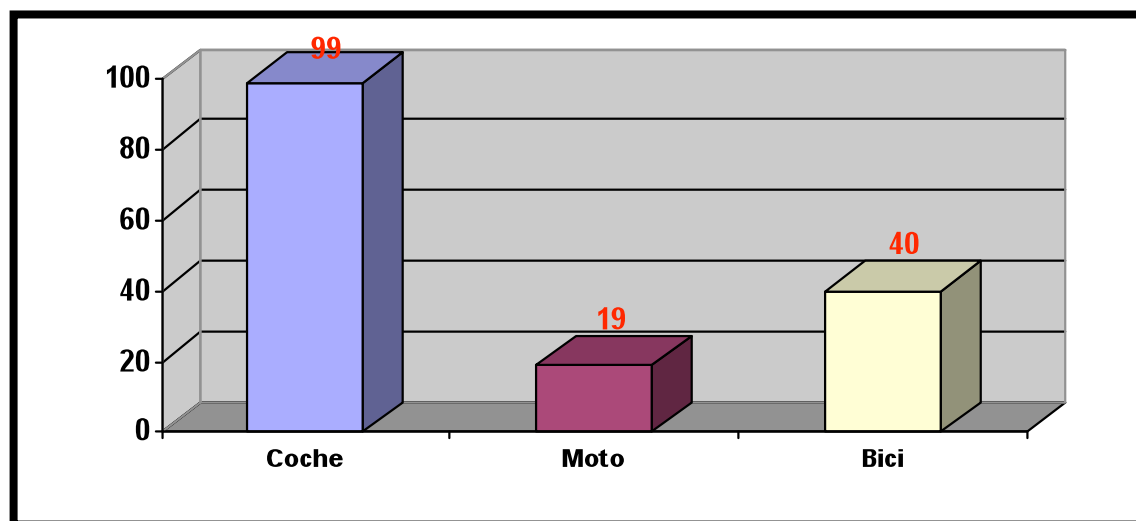


Current MOBILITY MODEL in Sarriguren:

- VEHICLE OWNERSHIP

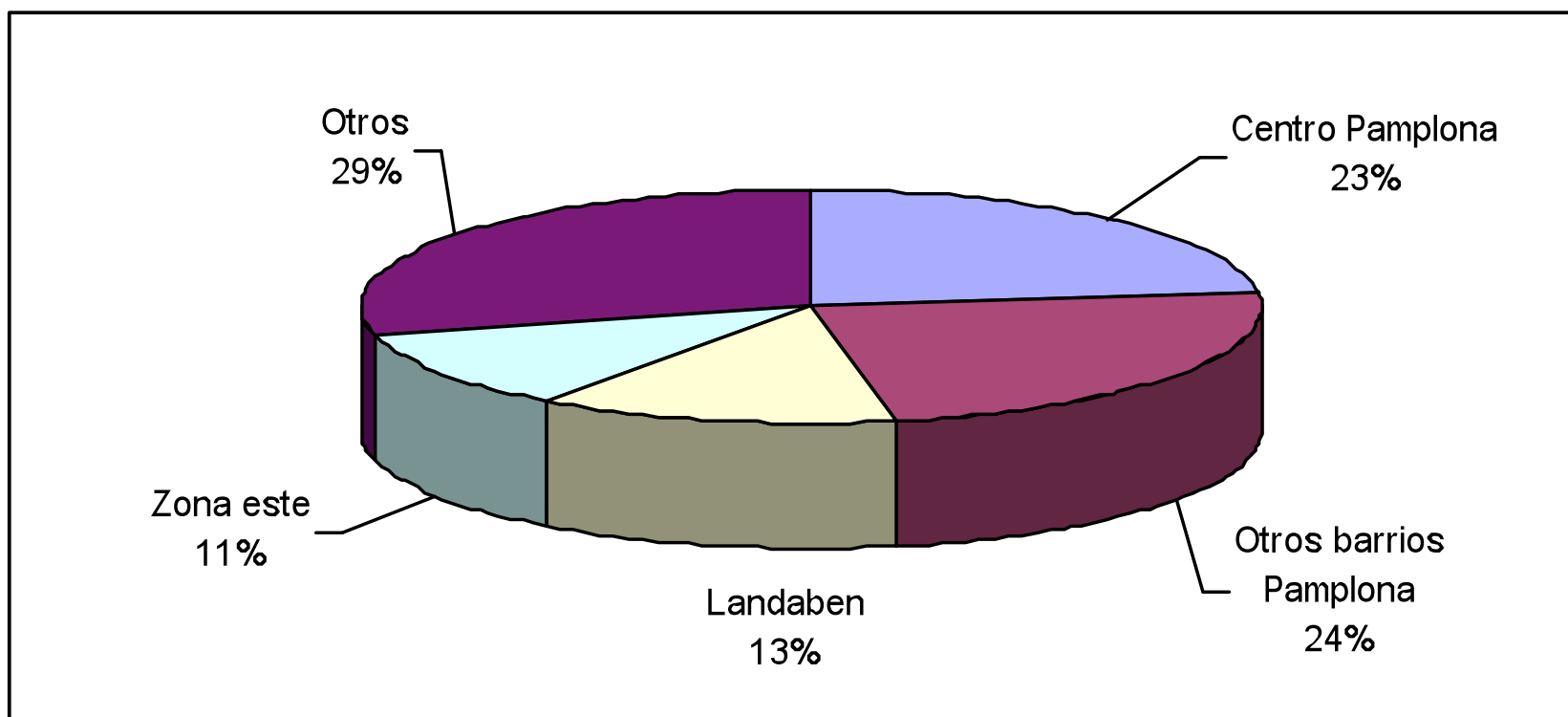
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- car 99%
- bicycle 40%



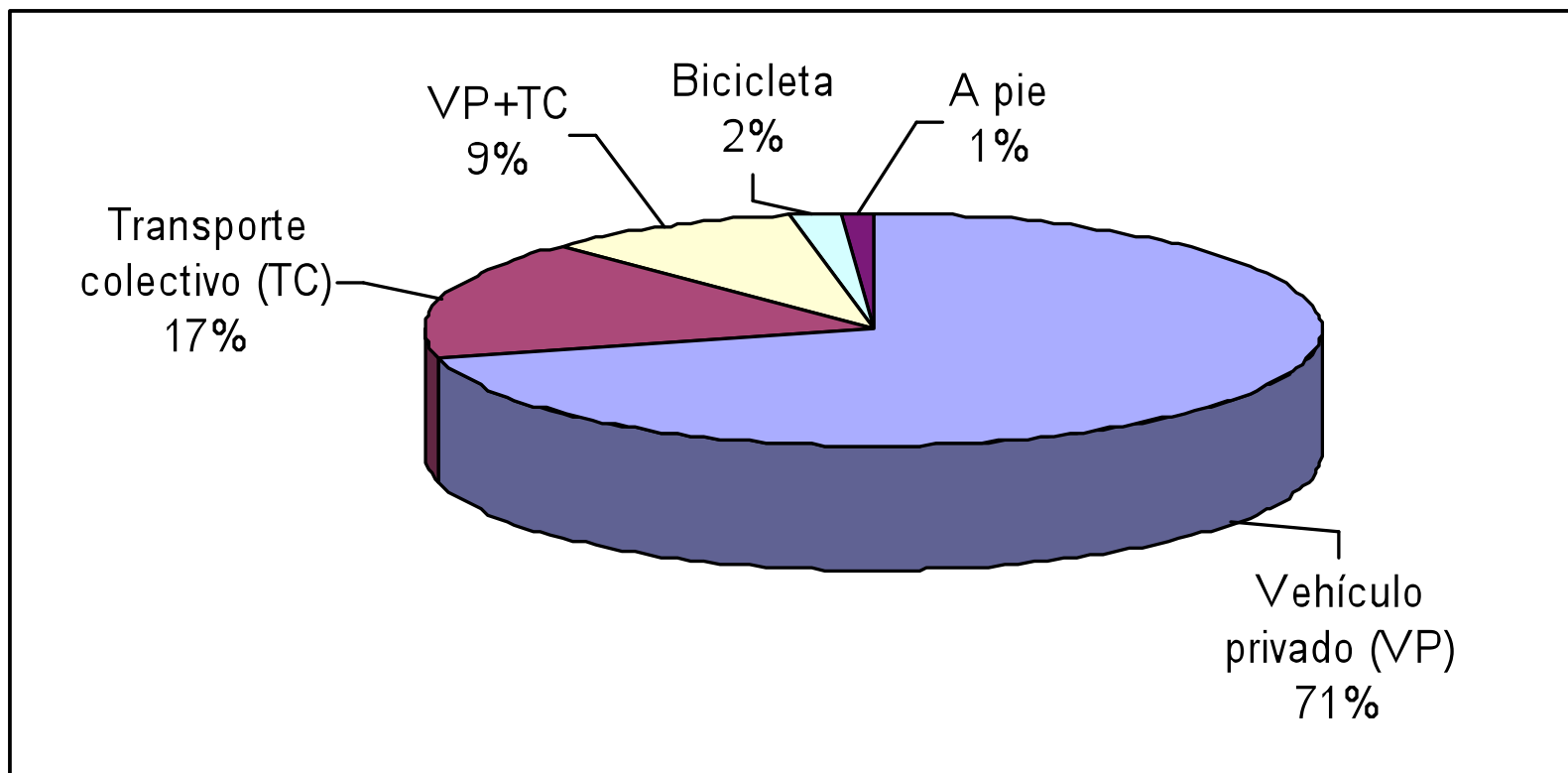
Current MOBILITY MODEL in Sarriguren:

- TRIPS DESTINATIONS FROM SARRIGUREN



Current **MOBILITY MODEL** in Sarriguren:

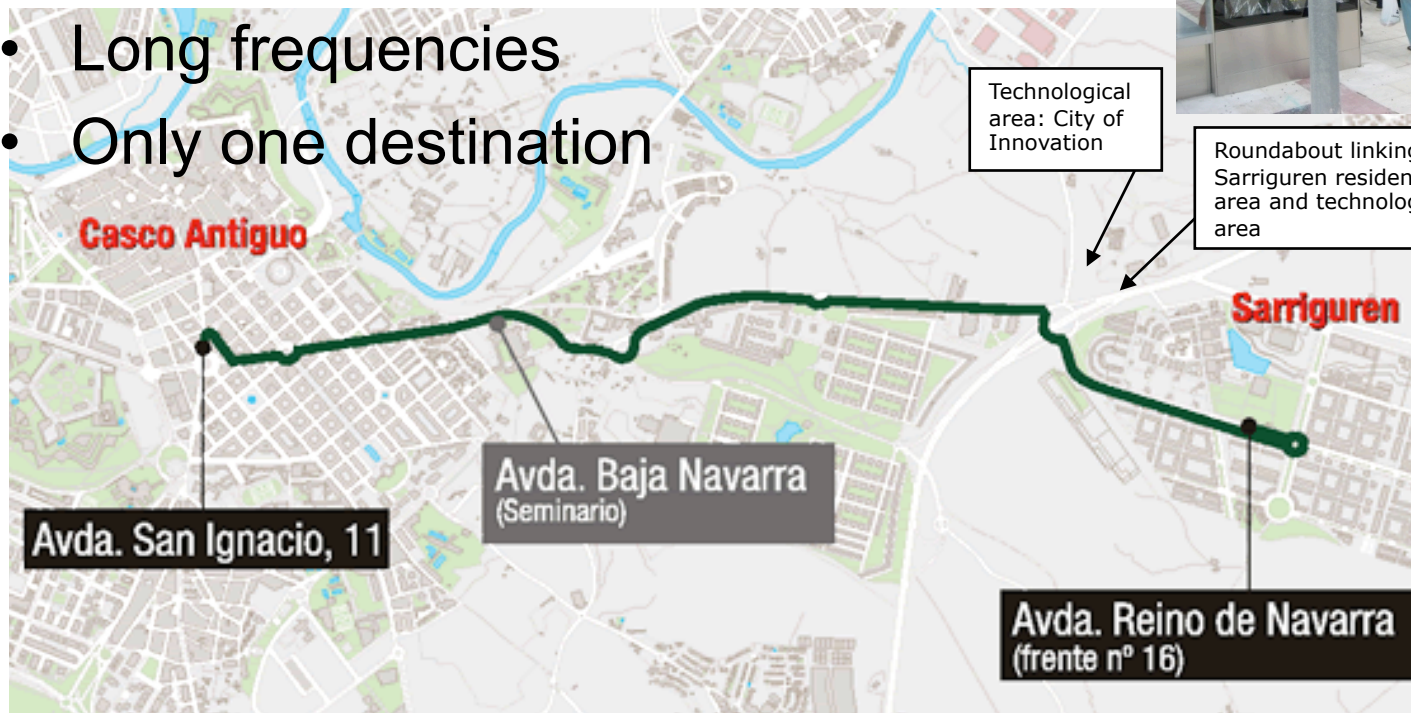
- MODAL SPLIT IN MAIN TRIPS**



Current MOBILITY MODEL in Sarriguren:

- PUBLIC TRANSPORT – BUS

- Long frequencies
- Only one destination



Current **MOBILITY MODEL** in Sarriguren:

- WALKING AND CYCLING FACILITIES
 - Only safe routes for leisure time
 - Lack of bicycle parkings





PROMOTIONAL ACTIVITIES to reduce car use:

- Participative process with inhabitants
- Stake holders involvement for improvements
- New services and advice provision to inhabitants
- Awareness campaigns implementation

PARTICIPATIVE PROCESS



PARTICIPATIVE PROCESS with inhabitants:

- 40 people directly involved
- 6 workshops + info point
- To complete diagnosis, make demands and define proposals
- Working with maps and proposals templates
- Measures have been study in groups by modes of transportation



PUBLIC TRANSPORT demands and proposals:

- New destinations apart from Pamplona centre
- Shorter frequencies
- ~~More buses at rush hours~~
- Schedule coordination with other lines
- ~~New route inside Sarriguren to access school and facilities~~



PUBLIC TRANSPORT AUTHORITY
RESPONSABILITY

COMPLETELY SOLVE

WALKING demands and proposals:

- Repair municipal paths connecting Sarriguren
- New crossroads + lights
- Reduce car speed limit
- ~~New accesses to facilities~~
- Safe connexion to Pamplona



MUNICIPALITY RESPONSABILITY



PARTLY SOLVE

CYCLING demands and proposals:

- Repair municipal paths
- Create cycling network + signs and regulations
- More and better bike parking
- ~~Public bikes services~~
- Safe connexion to Pamplona



MUNICIPALITY RESPONSABILITY



PARTLY SOLVE

CARS demands and proposals:

- Reduce speed limit
- New roundabouts and streets directions changes
- Parking regulation and control
- Car-sharing system
- Awareness campaigns



CRANA and NASURSA
RESPONSABILITY



Mobility TO SCHOOL:

- To share buses (private and public schools)
- To aware families
- To ask the police to take care on arrival and departure



STAKE HOLDERS INVOLVEMENT



Involving **STAKE HOLDERS for improvements**

- Stake holders are institutions involved in the implementation of the proposals
- Steering committee has been created and meet ones a year.
- Bilateral meetings and regular communications
- Municipality (internal and external mobility)
- Public Transport Authority (internal and external)
- Land Use, Transport and Public Works departments of the Government of Navarre
- CRANA and NASURSA (Pro.Motion partners)

SERVICES AND ADVICE





CAR POOLING arrangement system services

- Providing tools for sharing trips

Datos personales³

Nombre*: Apellidos:

Dirección:

Teléfono 1*: Teléfono 2:

Correo electrónico:

Datos itinerario⁴

Dirección de **origen**:

Dirección de **destino**:

Marque una de las tres opciones, según si **ofrece y/o busca viaje**:

☐ Deseo compartir coche conduciendo mi propio vehículo.

☐ Deseo compartir coche como acompañante en el vehículo de otro usuario de este servicio.

☐ Dispongo de coche propio y me es indiferente viajar como conductor en mi propio vehículo o como acompañante en el de otro usuario de este servicio.

Frecuencia con la que realiza este itinerario semanalmente (marque los días en los que realiza este itinerario), así como la hora aproximada de ida y vuelta:

☐ Lunes ☐ Martes ☐ Miércoles ☐ Jueves ☐ Viernes ☐ Sábado ☐ Domingo

Hora de salida trayecto de ida:h Hora de salida trayecto de vuelta:h

Comentarios (utilice este campo para cualquier observación. Ej.: si es fumador y le gusta fumar dentro de su vehículo, o si es mujer y le gustaría compartir vehículo sólo con mujeres...):

.....
.....
.....

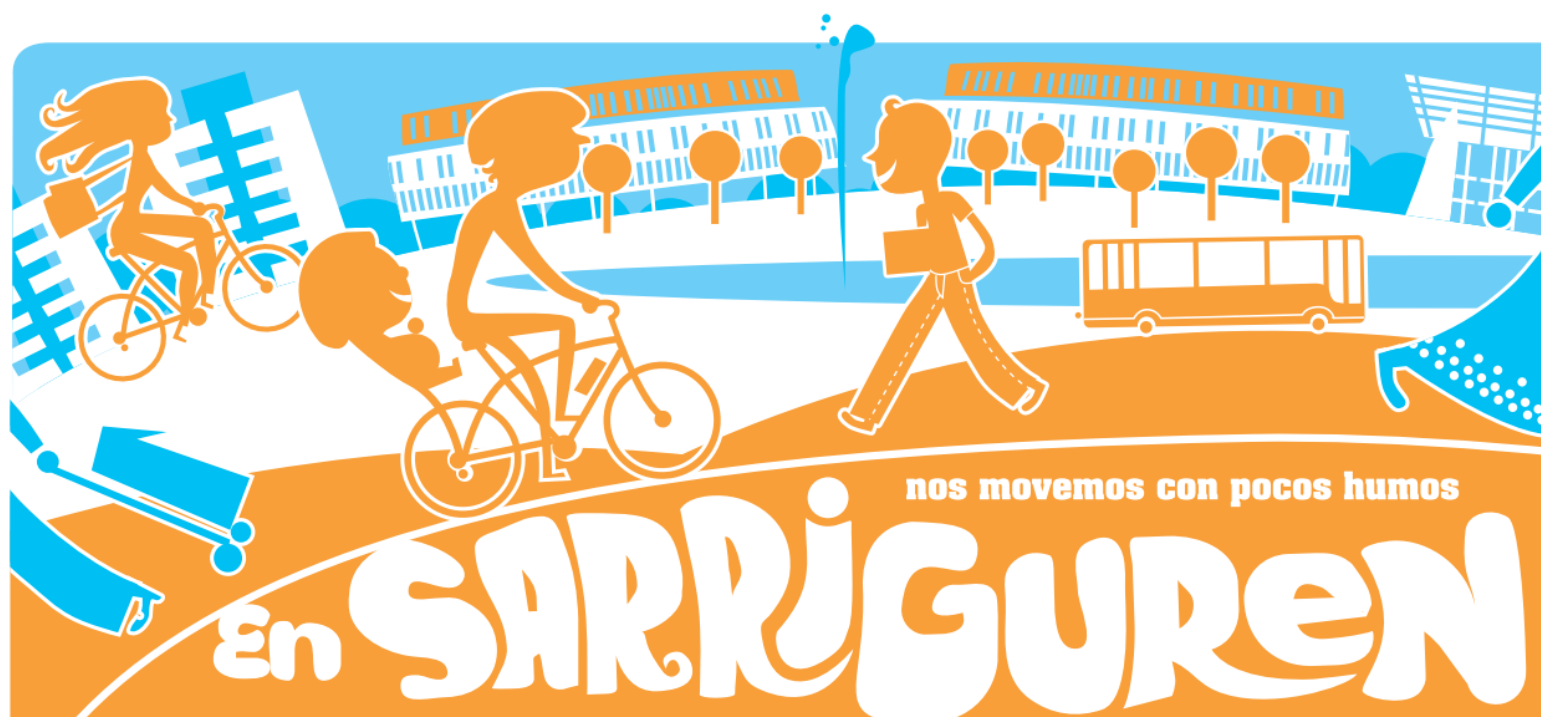
TRAVEL PLANNING advice service

- Providing tools for individual travel plans

Desplazamiento	Distancia	Número	Coste económico ⁽¹⁾ 0,25 €/Km.	Coste ambiental ⁽²⁾ Kgr. de CO ₂
Sarriguren – San Juan	.	1 viaje	$6,0 \times 1 \times 0,25 = 1,5 \text{ €}$	$130 \times 6,0 \times 1 = 780 \text{ gr.}$
San Juan - Gorraiz	.	1 viaje	$8,0 \times 1 \times 0,25 = 2,0 \text{ €}$	$130 \times 8,0 \times 1 = 1.040 \text{ gr.}$
Gorraiz - Sarriguren	.	2 viajes	$2,5 \times 2 \times 0,25 = 1,25 \text{ €}$	$130 \times 2,5 \times 2 = 650 \text{ gr.}$
Sarriguren - Chantrea	.	3 viajes	$6,0 \times 3 \times 0,25 = 4,5 \text{ €}$	$130 \times 6 \times 3 = 2.340 \text{ gr.}$
Chantrea - Gorraiz	.	1 viaje	$9,0 \times 1 \times 0,25 = 2,25 \text{ €}$	$130 \times 9 \times 1 = 1.170 \text{ gr.}$
TOTAL	.	8 viajes	11,5 €/día = 230 €/mes	5,98 Kgr. CO₂/día = 119,60 Kgr. CO₂ / mes (20 días laborables)

Opción de transporte	Coche uso individual	Coche compartido (mínimo 2 adultos)	Autobús (Ocupación 75%)	Bicicleta	Caminar
Coste para el usuario €/Km.	0,25 €/Km. ⁽¹⁾	0,12 €/Km.	0,53 €/Viaje. ⁽³⁾	0 €/Km ⁽⁴⁾	0 €/Km
Consumo Litros/Km.	./Km.	./Km.	./Km./Usuario	0 litros/Km.	0 litros/Km.
Emisión CO ₂ gr./Km.	130gr./Km. ⁽²⁾	65 gr./Km.	36 gr./Km./Usuario	0 gr/Km. CO ₂	0 gr/Km. CO ₂

AWARENESS CAMPAIGNS



GYM STARTS AT HOME campaign

- To encourage people to walk and cycle to the municipal sports centre
- Participants provide registration sheet and survey
- Non motorized trips has been validated putting cards in boxes located in non accessible by car public spaces.



GYM STARTS AT HOME campaign



**¡El gimnasio empieza en casa!
 Lehenbiziko gimnasioa, etxea!**



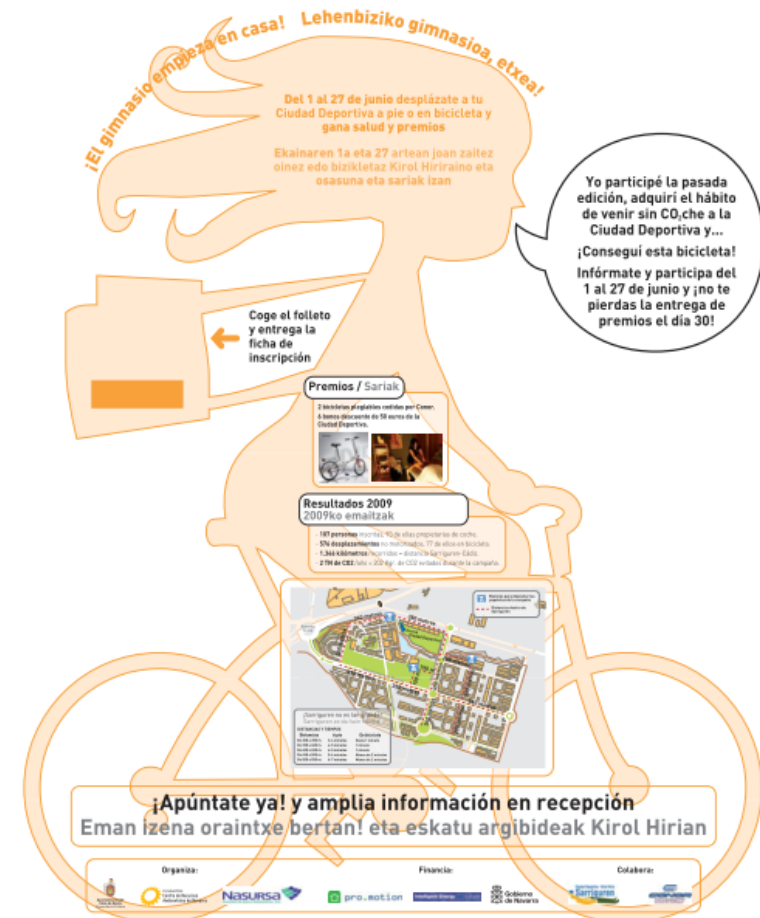
Nombre / Izena:

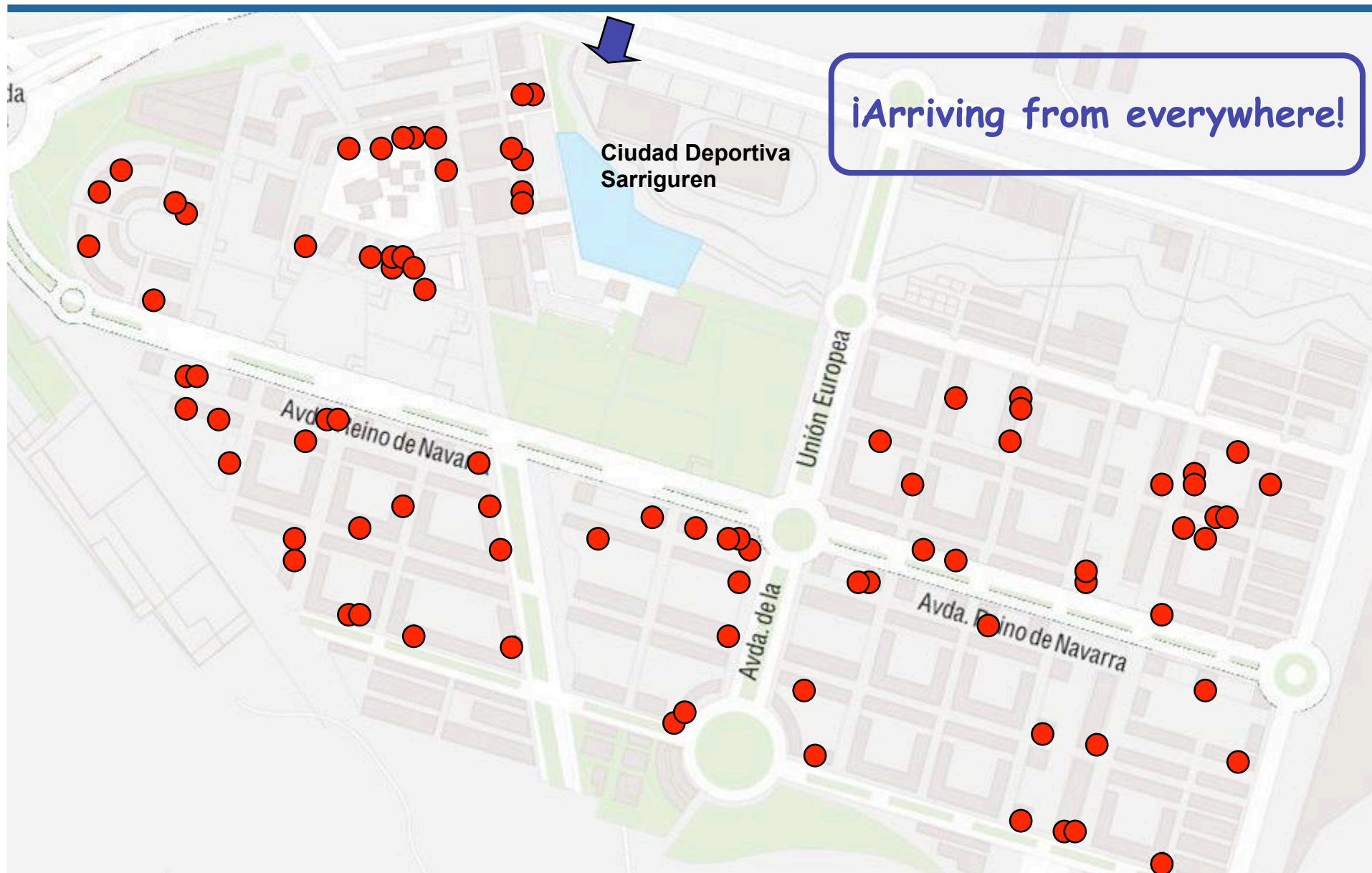
Fecha / Data:

Apellidos / Abizenak:

GYM STARTS AT HOME campaign

- RESULTS
 - 2 editions: October of 2009 and June of 2010
 - 104 and 144 participants
 - First edition: 578 non motorized trips
 - 1357 Km done in a month
 - 200 Kg of CO2 avoided in a month (2 TN/year)



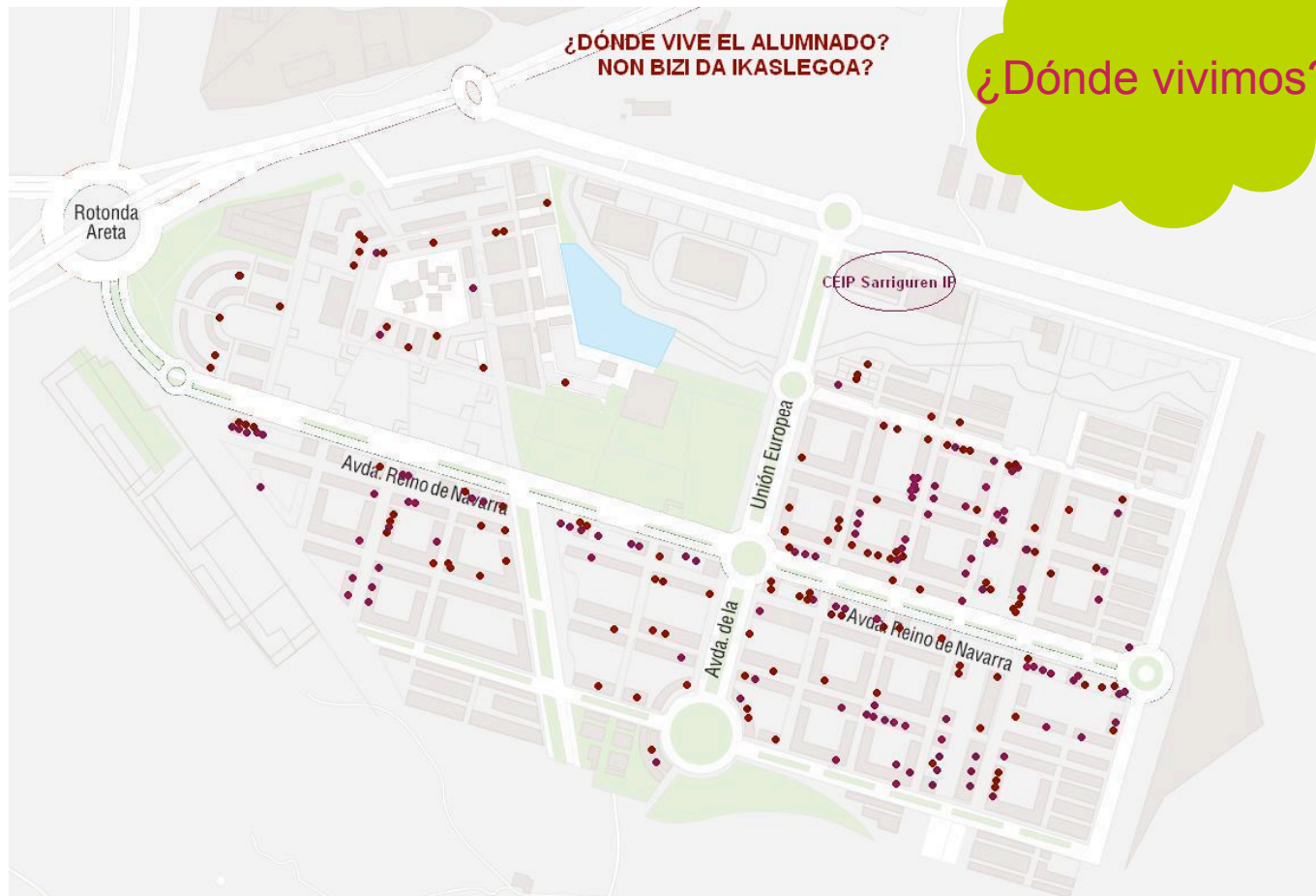


WALK TO SCHOOL campaign

- Agreement with Public Primary School direction and Municipality
- Workshops with parents associations
- Definition of walking routes with families

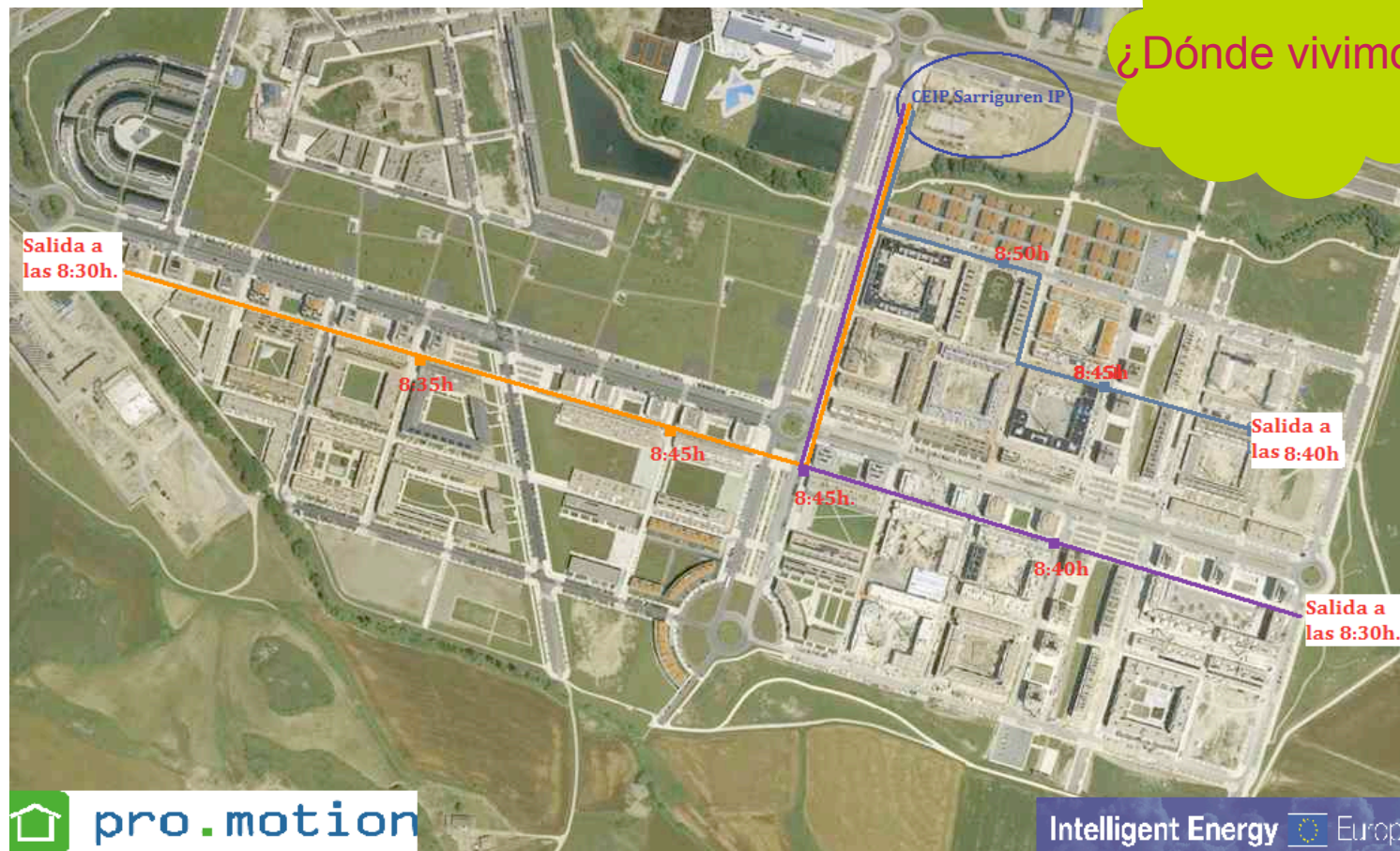


WALK TO SCHOOL campaign



1. ¿Qué son los caminos escolares?
2. ¿A qué responden?
3. Beneficios de los caminos escolares
4. ¿Cómo se ponen en marcha?
5. Situación en Sarriguren

WALK TO SCHOOL campaign

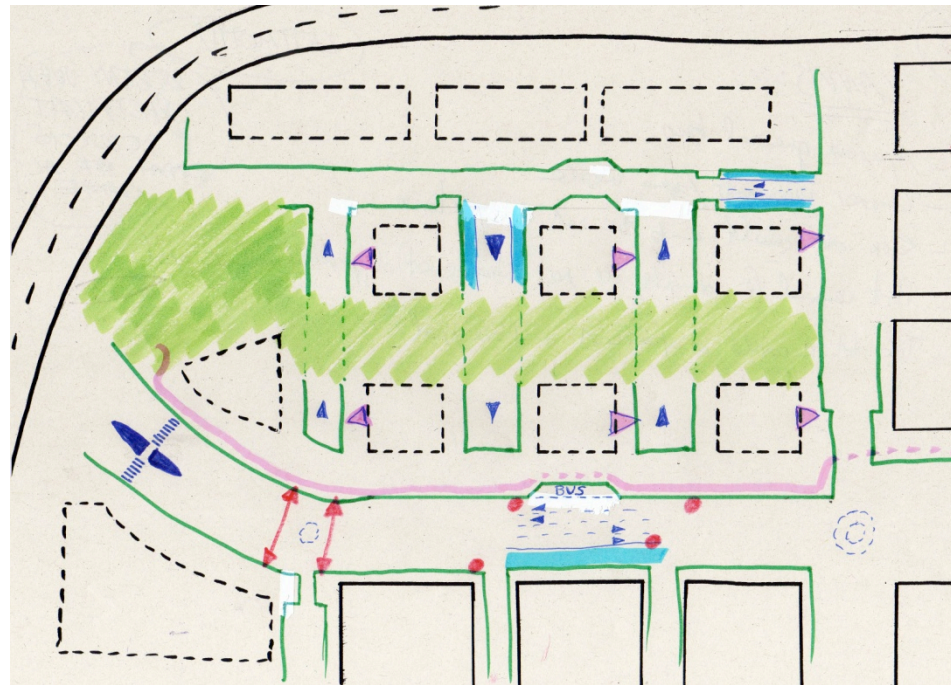


¿Dónde vivimos?



1. ¿Qué son los caminos escolares?
2. ¿A qué responden?
3. Beneficios de los caminos escolares
4. ¿Cómo se ponen en marcha?
5. Situación en Sarriguren

PROVIDING GUIDELINES TO URBAN PLANNERS



Providing GUIDELINES to URBAN PLANNERS

- Technical document “Sustainable mobility in Land and Urban Planning”
- Checking list as a tool for planners and administrations
- Training and working sessions with planning stakeholders and professionals to
 - Jointly define the checking list
 - Provide specific training

Planning **CHECKING LIST**

- OBJECTIVES
 - To drive planners reflexions and urban designs to favour sustainable mobility
 - To guide environmental evaluation that urban plans are force to include.
 - To be applied at any design step and to be use by any of the stake holders involved.

Planning CHECKING LIST

- BASIC DATA**

Name and initiative description:
Municipality:
Planning document:
Location (description of relation to adjoining or nearby urban spaces):
Transport infrastructures and services:
Total footprint:
Phase of planning: <input type="checkbox"/> conception, <input type="checkbox"/> preliminary design, <input type="checkbox"/> design <input type="checkbox"/> authorization, <input type="checkbox"/> construction, <input type="checkbox"/> finalized <input type="checkbox"/> other
Type of development: <input type="checkbox"/> public <input type="checkbox"/> private <input type="checkbox"/> other
Other information of interest:

• MOBILITY MODEL

Questions to explain regarding new urban developments	Yes/ No	Observations which help evaluate each response	Planners' comments
Has the question of transportation been studied and evaluated?		Proposed model of mobility, distribution of modes, impact of new demand upon existing infrastructures – roads and public transport system. All of this might lead to a “study of mobility generated” from which recommendations might be derived in order to improve the prospects of more sustainable modes.	
Has the generated (future) mobility been studied and evaluated?			
Have measures been proposed to fulfill public/collective transportation requirements?		Economic measures related to the availability of public/collective transport.	

• SPATIAL RELATIONS

Questions to explain regarding new urban developments	Yes/No	Observations which help evaluate each response	Planners' comments
LOCATION			
Have previously developed spaces or obsolete urban and industrial spaces been taken advantage of?		Interventions in spaces which have already previously been developed (infill or brownfield) should be encouraged over those which break new ground in rural or natural terrain ().	
Is the location contiguous with existing urban fabric?			
Are the interstitial spaces of the existing urban fabric being taken advantage of?			
Is new ground being colonized in agricultural or natural terrain?			
Is growth based on pre-existing nuclei?			
Is the development within walking distance (less than 2 km) or cycling distance (less than 6-7km) from complementary urban spaces?		The urban spaces which "complement" or "complete" new urban developments are those which provide the functions, activities and services which are not available in the development itself.	
DENSITY			
Is the development dense enough to generate vital citizen use and facilitate the use of sustainable modes of transport?		Less than 35 housing units per hectare Between 35-70 housing units per hectare More than 70 housing units per hectare	
Are sufficient economic activities for the resident population foreseen?		Number of jobs per hectare in different sectors: service, trade, industry, etc.	
MIX OF USES			
Does the development foresee residential and economic uses, with services of all types?		Proportion of different uses foreseen	
¿Does it show compatible different land uses?		Compatible uses	

• REGULATIONS

Questions to explain regarding new urban developments	Yes/No	Observations which help evaluate each response	Planners' comments
Size of parking areas. Parking standards			
Is there a minimum number for parking spaces corresponding to each use of the terrain?		Number of parking spaces for each housing unit or established use	
Have options been considered for flexibilizing the construction of parking spaces, in terms of location, number and time-frame?			
Are there maximum limits for number of parking spaces, according to proximity to collective transportation stops or cycling infrastructures?			
Building uses			
Are building uses flexible, permitting mixed use in buildings or neighbourhoods?		Accepted proportions of each use in the built terrain.	
Building types			
Are building types proposed in such a way that guarantees the attractiveness of and pedestrian access to public spaces?		Proportion of different building types: apartment buildings, single family homes, row houses, gated communities, etc.	
Is there a model of public space for each building type?		The way in which an attractive public space is planned in accord with each building type.	
Has there been an effort to relate proposed building types with those of the previously existing urban fabric?		Criteria for the relationship between proposed building types and those of the adjoining urban fabric (previously existing or proposed).	
Public roadway design			
Has a design model for the public roadways been established?		Criteria of roadway design, with attention not only to circulation but also to inhabitability.	
Does the design model of public roadways favour or dissuade the use of non-motorized or collective transport?			
Does the design model of the public roadways favour vehicle speeds of more than 30 km/h?			
Are there roads in which pedestrians have right of way, with speed limits of 10 or 20 km/h?			
Does the design model of the public roadways give priority to motor vehicles parked on the road side?			

• STRUCTURAL ELEMENTS

Questions to explain regarding new urban developments	Yes/ No	Observations which help evaluate each response	Planners' comments
Connecting road infrastructure			
Are there existing roads connecting the development to areas of activity and adjoining municipalities?			
Have these connecting roads been planned or foreseen? Their extension?			
Interior road infrastructure			
Has a road plan been defined which avoids perturbing public spaces and buildings with motor traffic?		Model of interior roads in terms of their relationship to public space and in terms of velocity.	
Public/collective transport Infrastructure and services			
Is the urban development linked to existing collective transportation services? Is any such service foreseen?			
Are interior and connecting roads designed to facilitate collective transport?		Access to collective transport stops (obstacles, distances, attractiveness)	
Has one central space (or several) been designated as a collective transport stop or station?			
Infrastructures for autonomous modes of transport (pedestrians and cyclists)			
Are there connections to adjacent areas and to urban centres for pedestrians and cyclists?			
Are the interior roads designed for the comfort and safety of pedestrians and cyclists?			
Are there direct connections for pedestrians and cyclists between the principle uses of the development?			
Has the public space been designed with space for parking bicycles?			
Have the roads been designed to slow traffic?			
Location of parking for motor vehicles			
Does the plan encourage or dissuade the indiscriminate use of the automobile by making access to it immediate and comfortable?			
Are parking areas distributed in such a way as not to perturb public space?			
Are parking areas concentrated in specific spaces or buildings or are they spread along the length of the roads?		Development on the ground or in buildings.	

TRAINING and working sessions: TARGET AUDIENCE

- Planning design experts (elaborating current plans)
- Planning regulation experts (lawyers)
- Public and private developers
- Representatives from Government of Navarre: Land Use, Transport and Public Works



TRAINNING and working sessions

- OBJECTIVES:
 - Participative process to present draft versions of technical document and jointly define planning checking list
 - Promote the starting of a process to change proceedings, working ways and regulations in Navarra (checking list as an evaluation tool for future plans)
 - Train planners on specific key aspects

TRAINING and working sessions



CONCLUSIONS AND LESSONS LEARNED

CONCLUSIONS:

- General conclusions working with new residential areas are:
 - Feelings on belonging to the new residential site has to be promoted before
 - Residents that are just moved has get detailed information before they establish their new mobility habits.

CONCLUSIONS:

- Success on participative process with inhabitants lean on:
 - Having clear objectives and explaining them to participants
 - Getting compromise of stake holders to study and try to implement proposals
 - Provide participants with information back from stake holders proposals studies.

CONCLUSIONS:

- Success on awareness campaigns leans on:
 - Encouraging people to experience changing behavior
 - Designing them with means of personal benefits
 - Using important resources not only in communication but in managing
 - Awareness campaigns might help to favor belonging to the site feelings

CONCLUSIONS:

- Success on proceedings and regulations changes leans on:
 - Involving stake holders in a participative process from the beginning
 - Providing them information and training in the targeted direction to guide their opinions and proposals

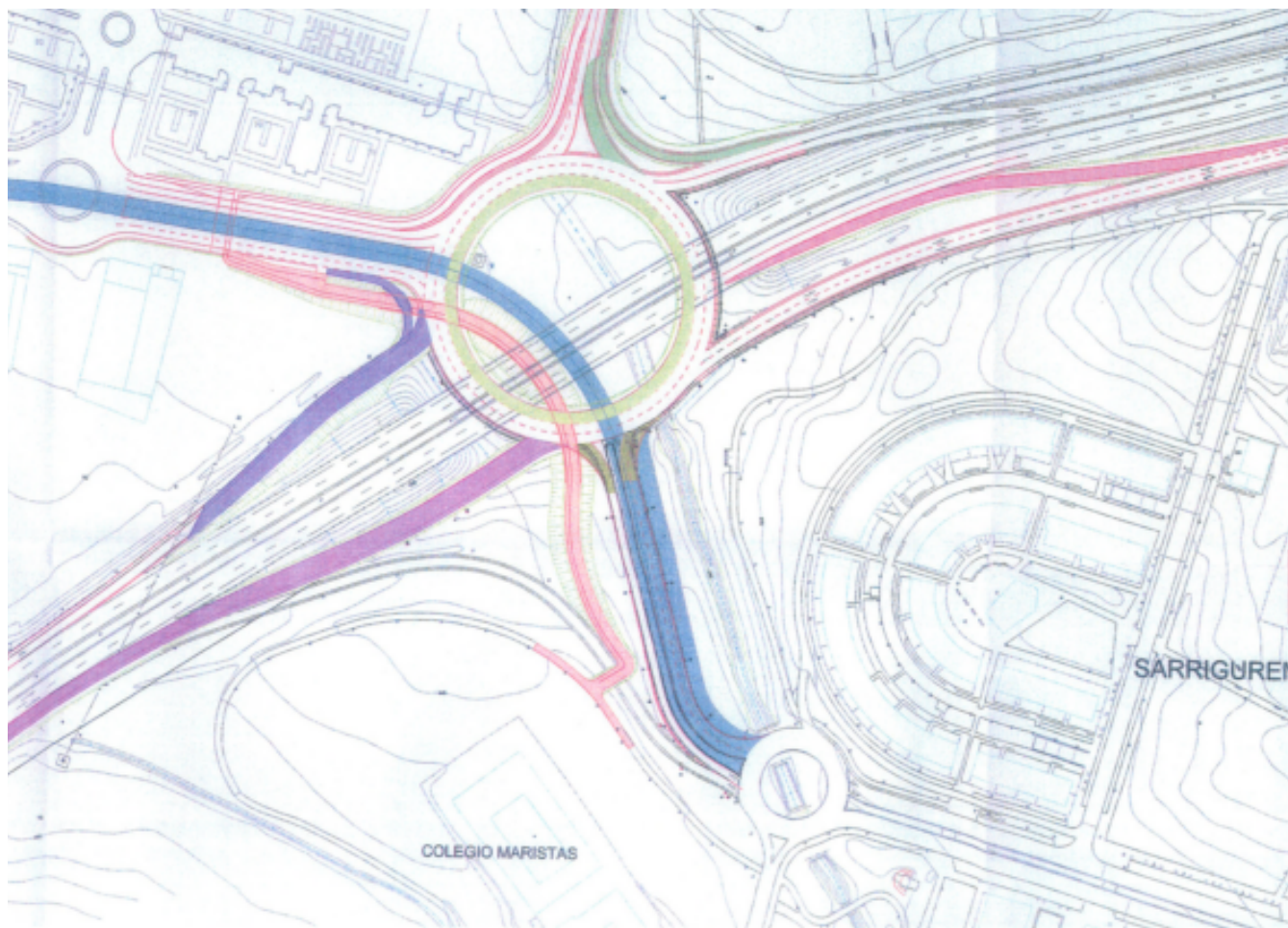
CONCLUSIONS:

- Urban planning and design prevent car use dependency when:
 - Accessibility to housings and daily activities is satisfied by walking and cycling (proximity)
 - Infrastructures and parking spaces for cars are reduced
 - Infrastructures for pedestrians and cyclist are increased and are attractive

LEASSONS LEARNED:

- Before implementing any measure or new service:
 - Their potential success has to be carefully study
 - It is easier to implant if it's tested with a small with of pioneers that can provide success factors
- As land strategies and planning have an important influences mobility model:
 - Mobility has to be consider in first planning steps to avoid future problems

LEASSONS LEARNED:



LEASSONS LEARNED:



CRANA

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